



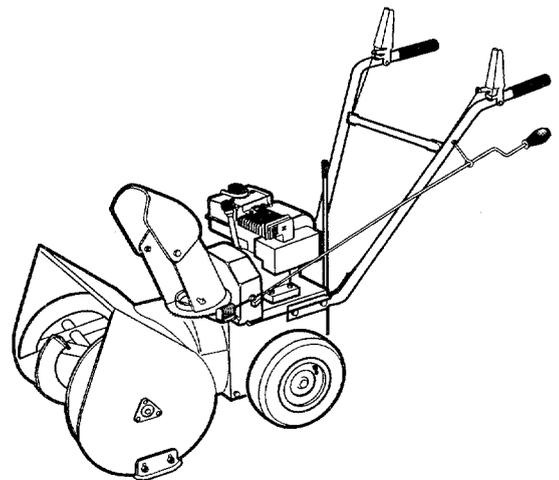
Owner/Operator Manual

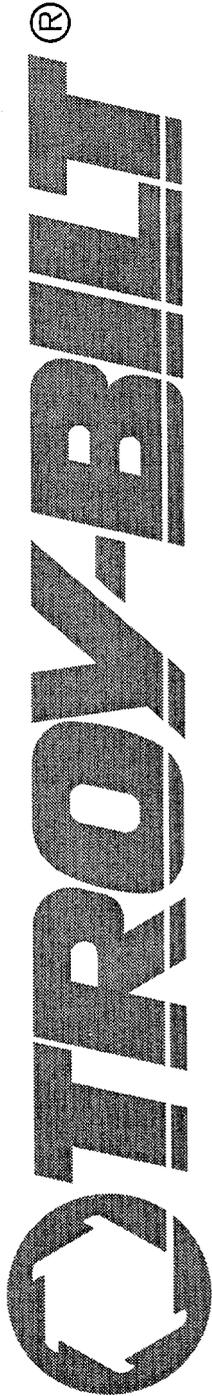
21", 5 H.P. Snowthrower

- Safety
- Assembly
- Controls
- Operation
- Maintenance

Model

42000





Dear Owner,

Thank you for purchasing this Troy-Bilt® Snowthrower. The unit was carefully designed and manufactured to provide excellent performance if properly operated and maintained.

Read this manual. This is a safety, operation and general maintenance manual which does not attempt to cover major repairs. This manual is considered a permanent part of the unit and it must stay with the unit if it is resold. A replacement manual can be obtained from the factory, free of charge. All information in this manual is based on the latest product information available at the time of printing. Review this manual frequently to familiarize yourself with the unit, its features and operation.

Our products have met the rigid safety standards of the Outdoor Power Equipment Institute and an independent testing laboratory.

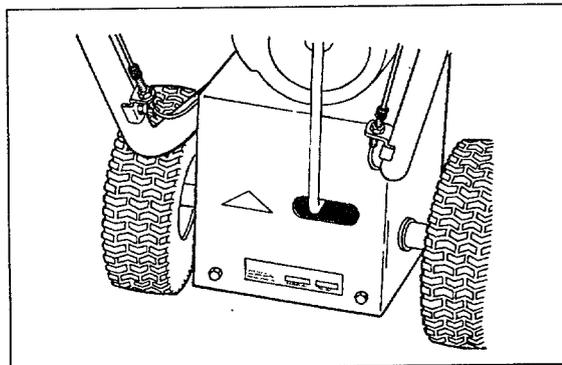
The warranty statement is included on the back cover of this manual.



Read it carefully. Also, please complete and return the postpaid owner registration card which is included with this manual. The purpose of this card is to register each unit and owner at the factory in order to provide informational bulletins and safety literature.

If you have any problems or questions concerning the unit, contact your local authorized dealer. Our telephone numbers and mailing addresses are listed on page 3.

We want to ensure your complete satisfaction at all times.



Safety alert symbol



This is a safety alert symbol. It is used in this manual and on the unit to alert you to potential hazards. When you see this symbol, read and obey the message that follows it. Failure to obey safety messages could result in personal injury or property damage.

Owner registration card

Please fill out and mail the enclosed owner registration card. The purpose of this card is to register each unit at the factory in order to keep the owner informed with informational bulletins and safety literature.

Warranty service

The warranty statement is included on the back cover of this manual.

Model/serial numbers

The model/serial numbers are located on the back of the unit. For quick reference, record these numbers in the spaces below.

Date of purchase:

Model/serial numbers:

Engine service and repair

For engine service or repair, contact your nearest authorized engine dealer. To locate your nearest engine dealer, look in the Yellow Pages under "Engines-Gasoline". The engine on the unit is warranted by the engine manufacturer. Any unauthorized work performed on the engine during the warranty period may void this warranty. For complete details on the engine warranty, refer to the engine owner manual.

Service and repair

For factory authorized service, contact your authorized dealer. Do not return parts directly to the factory. When ordering parts, provide your dealer with the model/serial numbers and a description of the parts required.

Replacement parts

Factory specified replacement parts are available from either your Troy-Bilt® authorized dealer or directly from the factory. For parts ordering information, refer to the parts catalog.

Left and right sides

Left and right sides of the unit are determined from the operator's position, facing the direction of forward travel.

Replacement owner/operator manual

A replacement Owner/Operator Manual is available at no charge. To order, call or write to the address below.

Customer service

If you have questions or problems with your unit, contact your local Troy-Bilt® dealer – or call or write to the addresses listed below. When calling or writing the factory, provide the model/serial number of your unit.

IN THE U.S.:

Garden Way Incorporated

102nd St. and 9th Ave.

Troy, New York 12180

For Service: (800) 833-6990

For Parts: (800) 648-6776

IN CANADA:

Garden Way Incorporated

320 Van Sickle Rd., Unit 12

Saint Catherines, Ontario L2R 6P7

For Technical Service or Parts:

(800) 225-3585

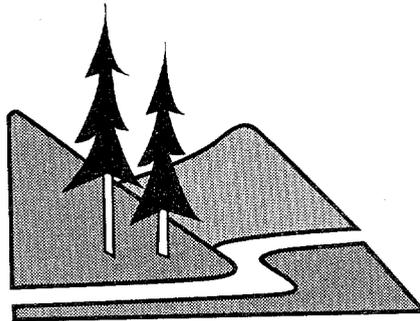
Table of Contents

Owner registration card	2
Warranty service	2
Model/serial numbers	2
Engine service and repair	2
Unit service and repair	3
Left and right sides	3
Replacement owner/operator manual	3
Customer service	3
SECTION 1: SAFETY	4
Safety Decals	7
SECTION 2: ASSEMBLY	8
Tools/additional assembly materials	8
Handlebar assembly	8
Discharge chute assembly	8
Control lever cable assembly	10
Tire pressure.....	11
Engine oil.....	11
SECTION 3: CONTROLS	12
Auger drive control lever	12
Wheel drive control lever	12
Discharge chute control rod	12
Discharge chute deflector cap	12
Gear shift lever	13
Skid shoes.....	13
Scraper blade.....	13
Engine controls	13
SECTION 4: OPERATION	15
Pre-operation checklist	15
Starting the engine	17
Stopping the engine	17
Wheel drive engagement/disengagement	18
Shifting gears.....	18
Reverse	18
Auger drive engagement/disengagement	19
Emergency stopping/stopping.....	19
Transporting the unit	19
Snowthrowing tips	19
SECTION 5: MAINTENANCE	22
Engine oil.....	22
Ignition system	22
Spark plug.....	23
Engine air cleaner	23
Carburetor.....	23
Lubrication	23
Wheel drive cable adjustment	24
Wheel drive belt replacement.....	25
Auger drive cable adjustment	25
Auger drive belt replacement	26
Auger shear bolts	27
Off season storage	27
Optional kits and specifications	28
Troubleshooting	29
Maintenance schedule	31
WARRANTY	Back Cover

Section 1 Safety

SPARK ARRESTER WARNING TO RESIDENTS OF CALIFORNIA AND SEVERAL OTHER STATES

Under California law, and under the laws of several other states, you are not permitted to operate an internal combustion engine using hydrocarbon fuels on any forest, brush, hay, grain, or grass covered land; or land covered by any flammable agricultural crop without an engine spark arrester in continuous effective working order.



The engine on the unit, is an internal combustion engine which burns gasoline, a hydrocarbon fuel and must be equipped with a spark arrester muffler in continuous effective working order. The spark arrester must be attached to the engine exhaust system in such a manner that flames or heat from the system will not ignite flammable material. Failure of the owner/operator of the unit to comply with this regulation is a misdemeanor under California law (and other states) and may also be a violation of other state and/or federal regulations, laws, ordinances or codes. Contact your local fire marshal or forest service for specific information about which regulations apply in your area.

Training



1. Read this owner/operator manual and the separate engine owner manual carefully before operating the unit. Be completely familiar with the controls and the proper use of the unit. A free replacement manual is available by sending the model and serial numbers of the unit to the factory.
2. Never allow children or untrained adults to use the unit.
3. Keep the area of operation clear of all people, particularly small children and pets. Keep bystanders at least 25 feet away from the area of operation.
4. Familiarize yourself with all of the safety and operating decals on the unit and on any attachments or accessories.
5. Do not run the engine in an enclosed area. Engine exhaust contains carbon monoxide gas, a deadly poison that is odorless, colorless, and tasteless. Do not operate the unit near buildings, windows, or air conditioners.
6. Keep hands or any other part of the body or clothing away from the inside of the auger housing, discharge opening, and away from any moving parts.
7. Before inspecting, servicing or adjusting any part of the unit, shut the engine off, wait for all moving parts to stop, and disconnect the spark plug wire from the spark plug. Secure the wire away from the spark plug.
8. Do not operate the unit if you are under the influence of alcohol, medication, or when tired or ill.

Preparation

1. Wear approved safety glasses or eyes shields and hearing protection when operating the unit. The operation of any powered machine can result in foreign objects being thrown by high-speed rotating parts.
2. Do not wear loose-fitting clothing, such as scarves, that can get caught by moving parts. Tie up or restrain long hair.

Section 1: Safety (continued)

3. Before starting the engine, check the tightness of all screws, nuts, bolts, and other fasteners. Replace any damaged or unreadable safety and operating labels.
 4. Wear adequate winter outer garments when operating the unit. Wear footwear that will improve footing on slippery surfaces. Exercise caution to avoid slipping or falling, especially when operating in reverse.
 5. Use extra care when handling gasoline and other fuels. Gasoline and its vapors are highly flammable and explosive. To help prevent a fire or explosion:
 - a. Store gasoline only in an approved gasoline storage container, safely out of the reach of children.
 - b. Never remove the fuel fill cap on the fuel tank, or add fuel while the engine is running or hot.
 - c. Keep matches, smoking materials, open flames, and sparks away from the fuel tank and gasoline storage container.
 - d. Fill the fuel tank outdoors and with extreme care. Never fill the fuel tank indoors.
 - e. Replace the fuel fill cap on the fuel tank, the cap on the gasoline storage container, and clean up fuel spills before starting the engine.
 - f. Leave 1/2-inch (2.5 cm) air space at the top of the fuel tank to allow for fuel expansion.
 - g. Do not store the unit or the gasoline storage container where there is a danger of an open flame or spark, or where ignition sources are present such as hot water and space heaters, furnaces, clothes dryers, stoves, electric motors, etc.
 6. For units equipped with the electric-start kit:
 - a. Only use a 3-pronged, UL rated and approved, outdoor use electrical cord.
 - b. Only plug into a properly grounded, 3-pronged outlet. Do not use any adapters on the cord.
 - c. Inspect the electrical cord for damage before using it. If it is damaged, do not use it.
 - d. Stand on dry ground when handling the electrical cord. Do not handle the electrical cord with wet hands or wet gloves. Do not use the electric starter if it is raining.
 - e. Connect the cord to the electric starter first, and then plug the cord into a properly grounded outlet (this lessens the chances of a spark occurring near the engine).
 - f. Do not abuse the electrical cord. Do not pull the unit by the cord. Do not yank the cord to disconnect it from the outlet. Keep the cord away from sharp edges, oil, and excessive heat.
 7. Adjust the skid shoes and scraper blade so the auger housing to clear gravel or crushed rock surfaces.
 4. Let the unit adjust to outdoor temperature before use.
 5. Check the operation of the controls before using the unit. Do not operate the unit unless all controls are operating properly.
 6. Never carry passengers on the unit. They could fall off and be seriously injured, or they could interfere with safe operation.
- 
7. Keep hands, other body parts, and clothing away from any moving or rotating parts. Keep clear of the intake and discharge openings at all times.
 8. Before starting the engine, inspect the area where the unit is to be used and remove all sleds, boards, doormats, metal, bottles, cans, or other debris.
 9. Keep children out of the area of operation and under the watchful eye of an adult not operating the unit. Never assume that children will remain where you last saw them.
 10. If the unit makes an unusual noise or vibration, immediately shut the engine off, wait for all moving parts to stop, disconnect the spark plug wire from the spark plug and perform the following steps:
 - a. Inspect for damage.
 - b. Replace or repair any damaged parts.
 - c. Check for and tighten any loose parts.

Operation

1. The operator of the unit is responsible for the safety of all persons in the operating zone of the unit.
2. Before starting the unit, disconnect the spark plug wire and check the auger and discharge chute to make sure they are free of ice. Check the engine oil level. Reconnect the spark plug wire before starting the engine.
3. Disengage all clutches and shift into neutral before starting the engine.

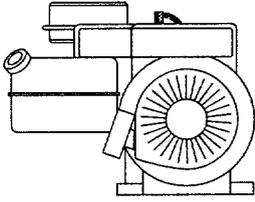
Section 1: Safety (continued)

11. If the unit jams or becomes clogged, shut the engine off immediately and allow all moving parts to come to a stop. Disconnect the spark plug wire from the spark plug and secure the wire away from the spark plug. Use only a wooden stick (at least 3 feet long) to clear away blockage.
12. Before inspecting the unit or making any adjustments, stop the engine and allow all moving parts to come to a stop. Disconnect the spark plug wire from the spark plug and secure the wire away from the spark plug.
13. Keep all guards, covers, shields and safety devices in place and in good working condition. Do not attempt to defeat the purpose of any safety device.
14. Exercise extreme caution on slopes.
15. Do not attempt to clear steep slopes.
16. Do not clear snow across the face of slopes. Exercise extreme caution when changing direction on slopes.
17. Always observe the terrain. Watch for and avoid obstacles. Stay away from holes, ditches, soft or steep embankments and other potentially dangerous terrain. Deep snow can hide obstacles and drop-offs.
18. Do not use the unit near drop-offs, ditches, or embankments. If a wheel goes over an edge, or if an edge caves in, the unit could overturn.
19. Do not operate the unit at high transport speeds on slippery surfaces. Wet surfaces reduce traction and stability.
20. Look behind and use care when operating the unit in reverse. If you have to pull the unit backward, disengage the auger and wheel drives. Always check behind you for hazards.
21. Be extremely careful when using the unit near blind corners, shrubs, trees, and other objects that may obscure vision.
22. Be extremely careful when operation or crossing gravel drives, walks or roads. Stay alert for hidden hazards or traffic.
23. Remove any hearing protection and watch for traffic when operating near, or when crossing roadways.
24. Never leave the unit unattended when the engine is running. Before leaving the unit unattended, stop the engine, let all moving parts come to a stop, and disconnect the spark plug wire from the spark plug.
25. Use only attachments and accessories that are approved for use with the unit. Contact the factory customer service department, at the address and phone number on page 3, if you are not sure about the use of any attachment or accessory.
26. Operate the unit only in daylight or in good artificial light.
27. Do not tamper with the engine governor settings. The governor controls the maximum safe engine operating speed and protects the engine and moving parts from damage. Contact your local engine dealer for service if a problem exists.
28. Shut off the engine, disconnect the spark plug wire and secure the wire away from the spark plug, before transporting the unit a vehicle or trailer.
29. Do not touch the muffler or other engine parts which may be hot from operation. Wait for parts to cool completely before inspecting, cleaning, or repairing the unit.
30. Never operate the unit near buildings, glass enclosures, automobiles, window wells, drop-offs, etc., without first properly adjusting the discharge angle and direction. Keep children and pets away.
31. Never direct discharge at bystanders. Never allow anyone in front of the unit when the engine is running.
32. Disengage the auger drive when the unit is being transported or not in use.
33. Disengage the auger and wheel drives if you are approached by any child, inattentive person or pet.
34. Run the unit for a few minutes after use to prevent freeze-up. Remove any snow from the unit (snow can melt, and then re-freeze inside the unit).

Maintenance and Storage

1. When the unit is stopped for servicing, inspection, storage, or to change an attachment or accessory, disconnect the spark plug wire from the spark plug and secure the wire away from the plug. Let the engine cool before making inspections, adjustments, or performing any maintenance.
2. Maintain the unit and all attachments and accessories in safe working condition.
3. Never perform any maintenance while the engine is running, or when the spark plug wire is connected to the spark plug.
4. Do not store the unit or fuel container inside an enclosure where there is an open flame or spark, or where ignition sources are present, such as: Hot water and space heaters, furnaces, clothes dryers, stoves, electric motors, etc.

Section 1: Safety (continued)



Decals

For your personal safety and the safety of others, there are a number of safety message decals have been affixed to your unit. Keep them clean and legible at all times. Contact your local service dealer or the factory for replacements if any of these decals are damaged or missing.

Refer to the separate parts catalog for decal locations, part numbers, and ordering instructions.

5. Allow the engine to cool before storing in any enclosure.
6. Store gasoline in a cool, well-ventilated area, safely away from any spark- or flame-producing equipment.
7. Store gasoline only in an approved gasoline storage container, safely out of the reach of children.
8. Use only original equipment replacement parts. Parts manufactured by others could present a safety hazard even though they may fit on the unit.
9. Store the unit where children will not have access to it. Always disconnect the spark plug wire from the spark plug to prevent accidental starting. Remove the ignition key from the ignition switch.
10. Check the tightness of the auger shear bolts and other fasteners at frequent intervals.
11. Maintain or replace safety and instruction decals if they are damaged or illegible. Refer to the parts catalog for decal location and ordering information.
12. Refer to the engine owner manual for complete engine operation and maintenance information.

Section 2 Assembly

Inspect unit

Inspect the unit and carton for damage immediately after delivery. Contact the carrier (trucking company) if you find or suspect damage. Inform them of the damage and request instructions for filing a claim. To protect your rights, put your claim in writing and mail a copy to the carrier within 15 days after the unit has been delivered. Contact us at the factory as indicated on page 3 of this manual if you need assistance in this matter.

Shipping carton contents

The shipping carton should contain:

- Snowthrower/engine/auger assembly.
- Handlebars.
- Discharge chute assembly (including discharge chute control rod and control rod support bracket).
- Hardware package containing:
 - (2) cable brackets.
 - (1) 1/4"-20 x 1-1/2" cap bolt
 - (1) 1/4" flat washer
 - (1) 1/4"-20 locknut
 - (4) 5/16"-18 x 5/8" hex flange bolts
 - (2) 1/4"-20 x 3/4" hex flange bolts.
 - (2) cotter pins.
 - (2) ignition keys (attached to choke knob).
 - * (2) extra 5/16"-18 x 1-3/4" locknuts (see note below).
 - * (2) extra 5/16"-18 x 1-3/4" shear bolts (see note below).

***Note: These items are replacements for the auger shear bolts and lockwashers (If the auger jams, the shear bolts are designed to break to prevent damage to the auger). Tighten these bolts and lockwashers to 11 ft-lbs (15 Nm). Only use these special bolts in**

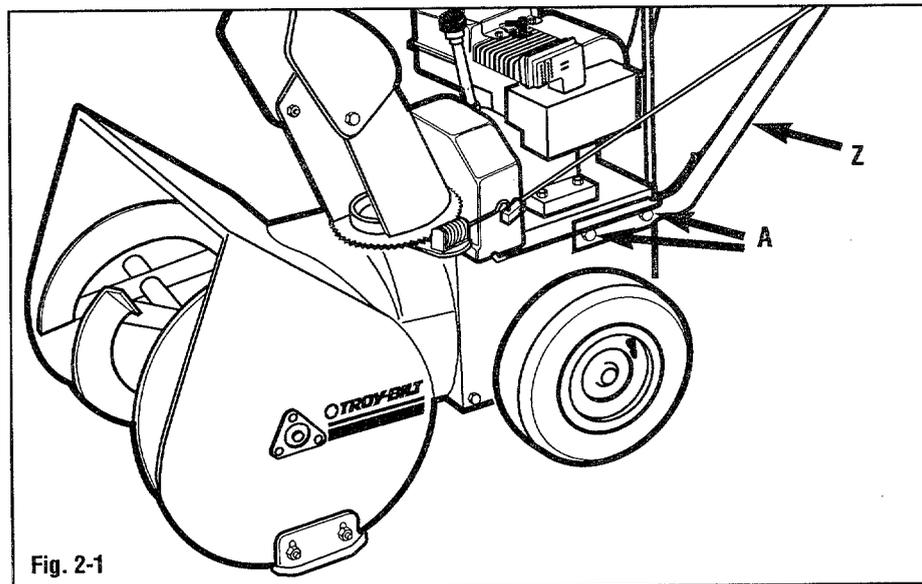


Fig. 2-1

this location (part number 1720515). If other bolts are used in this location, damage to the unit could result.

Tools/additional assembly materials

Tools/materials required to assemble the unit:

- ** (2) 7/16" wrenches.
- ** (2) 1/2" wrenches (one open-ended).
- ** (1) 3/8" wrench.
- ** (1) 5/16" wrench.
- ** (1) 9/16" wrench.
- (1) needle-nosed pliers.
- (1) automotive-type air pressure gauge.
- (1) clean funnel.
- (1 oz.) multi-purpose grease.
- (approximately 21 oz.) clean, high-quality engine oil. Refer to the engine owner manual for exact engine oil specifications.

****Note: adjustable wrenches may be substituted.**

Handlebar assembly

1. Position the handlebars (Z, Fig. 2-1) as shown, so the holes in the handlebars align with the holes in the upper rear corners of the snowthrower frame.
2. Loosely install four 5/16"-18 x 5/8" hex flange bolts (A).
3. Evenly tighten all four bolts (A).

Discharge chute assembly

1. Remove the cardboard liner and the chute control assembly inside the discharge opening on top of the unit.
2. Remove the shims and clips (B and D, Fig. 2-2) from the sides of the discharge chute. Loosen, but do not remove the front shim and clip.
3. Apply multi-purpose grease to the top surface of the discharge chute flange (C).

Section 2: Assembly (continued)

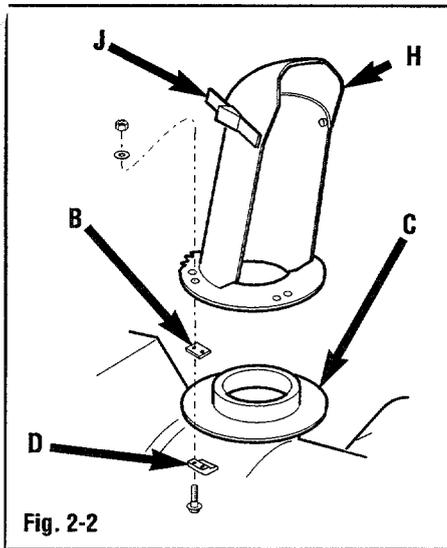


Fig. 2-2

4. Position the discharge chute onto the discharge chute flange on the auger housing, with the front hold-down clip (Fig. 2-3) hooked under the flange, and the nylon shim on top of the hold-down clip against the top of the toothed flange.
5. Rotate the discharge chute opening so it is facing to the right. Install the nylon shim (B, Fig. 2-2) and hold-down clip (D) on the left side of the chute as shown in Fig. 2-3.
5. Rotate the discharge chute opening so it is facing to the left. Install the nylon shim (B, Fig. 2-2) and hold-down clip (D) on the right side of the chute as shown in Fig. 2-3.

IMPORTANT: Engine oil must be added to the engine crankcase before the engine is started. See the engine owner manual (included with this unit) for more specific engine oil information.

Discharge chute control rod assembly

1. Position the hole in the swivel block (E, Fig. 2-4) over the hooked end of the chute control connecting rod (F). Secure the swivel block to the connecting rod with a cotter pin. Bend the ends of the cotter pin over to secure it in place.

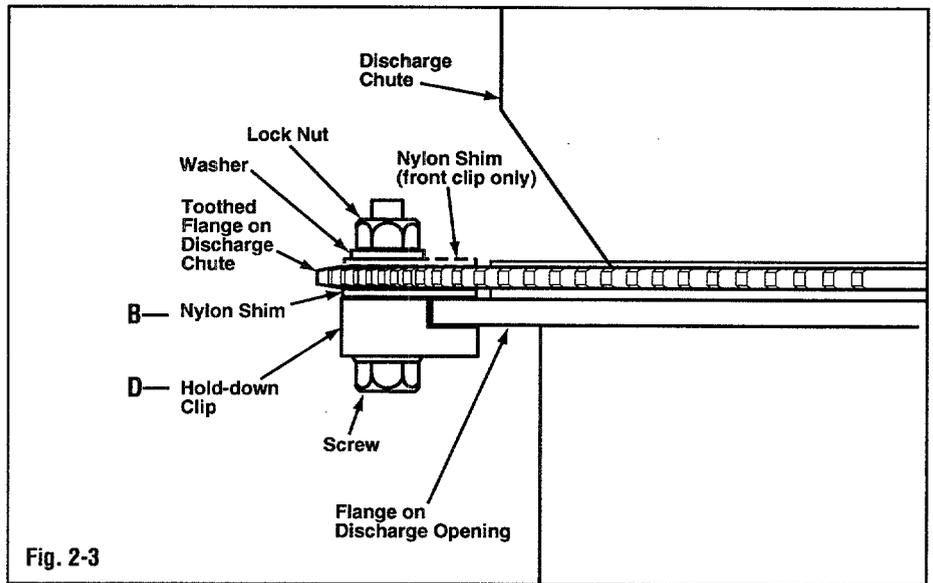


Fig. 2-3

2. Position the support bracket (G, Fig. 2-4) against the handlebar as shown. Using two 7/16" wrenches, secure the support bracket (G) to the handlebar with one 1/4-20 x 1-1/2 cap bolt, one 1/4 flat washer and one 1/4"-20 locknut.
3. Move the discharge deflector cap (H, Fig. 2-2) upward by pulling out lever

(J), positioning the cap and releasing the lever (J). Make sure stud on lever is seated in one of the positioning holes on the discharge chute cap.

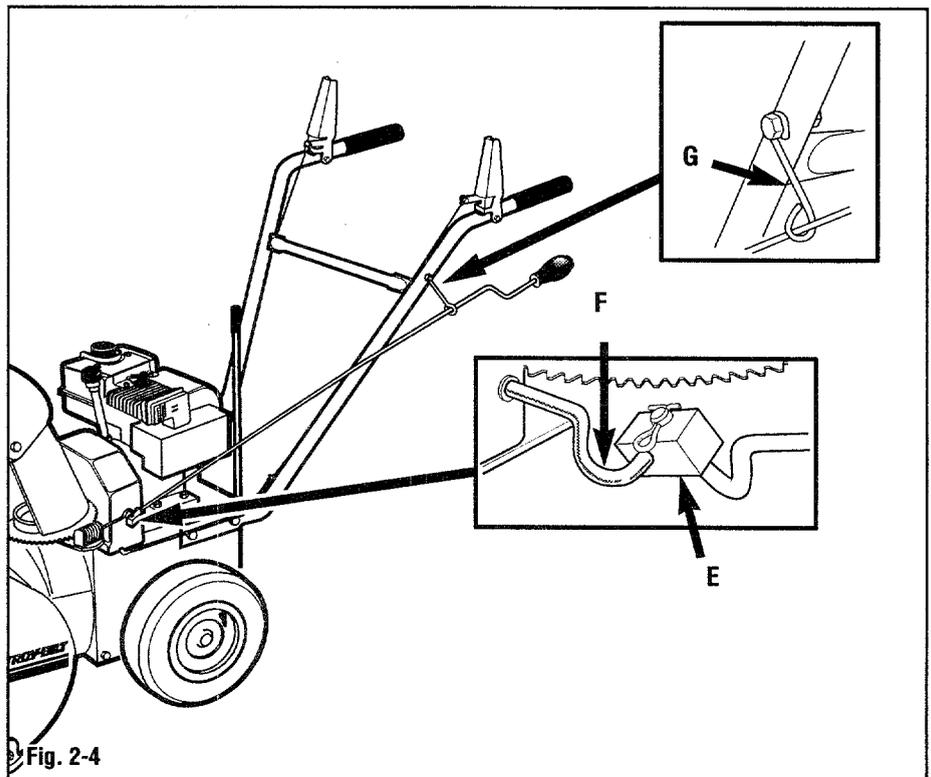
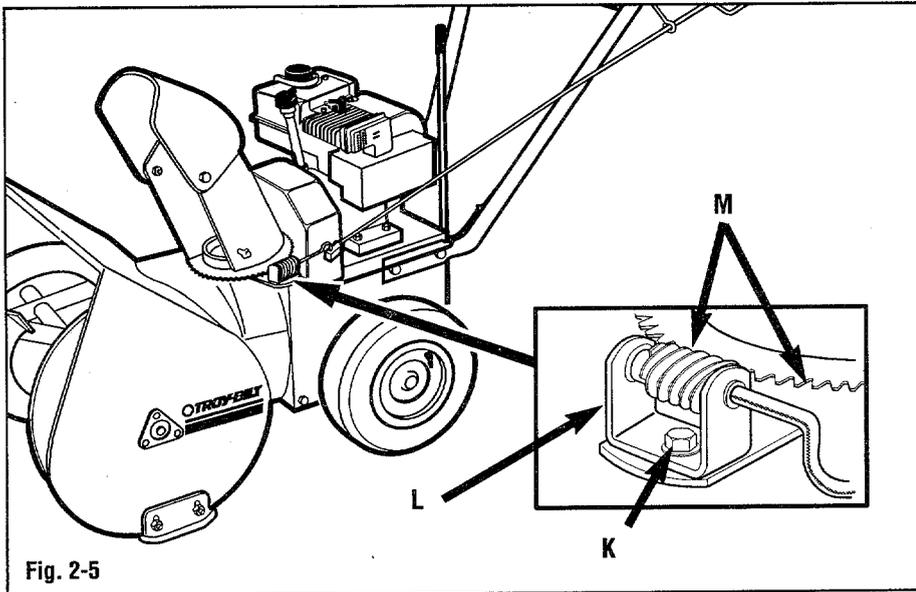


Fig. 2-4

Section 2: Assembly (continued)



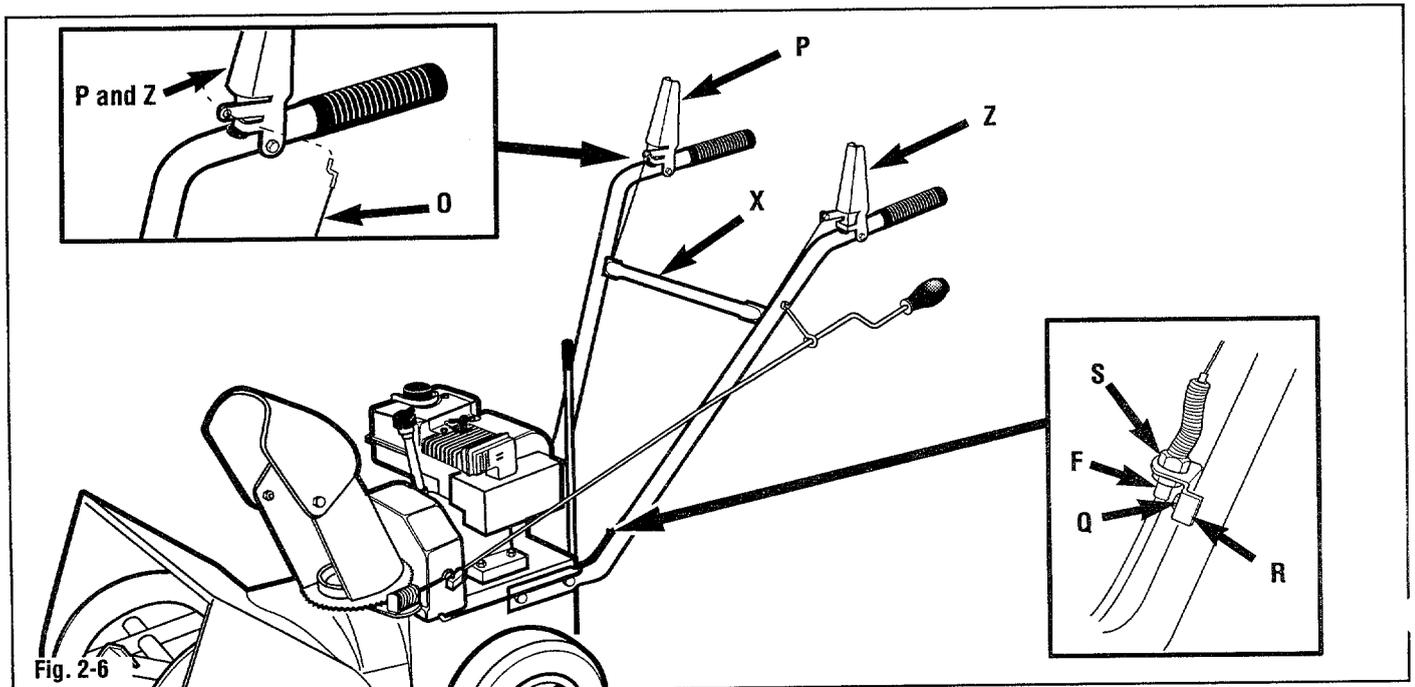
Chute control crank assembly

1. Cut the tie securing the chute control crank bracket (L, Fig. 2-5). Remove the locknut backing screw (K).
2. Position the chute control crank bracket (L) on the auger housing so the worm gear meshes with the teeth in the discharge chute flange.
3. Secure the chute control crank bracket to the auger housing with the locknut removed in step 1.
4. Rotate the chute control crank and check for binding. Adjust, if required, as follows:
 - a. Loosen the nut backing bolt (K, Fig. 2-5).

- b. Adjust bracket (L)-(push in to tighten; pull out to loosen).
- c. Retighten the nut backing bolt (K).
- d. Check chute rotation and repeat adjustment as needed.
5. Apply multi-purpose grease to the worm gear and toothed edge of discharge chute flange (M).

Control lever cable assembly

1. Hook the control cable assembly (O, Fig. 2-6) entering the left side of the frame into the right control lever (P). The control cable (O) must be routed behind cross-member (X).
2. Hook the control cable assembly (O) entering the right side of the frame into the left control lever (P and Z). Control cable (O) must be routed behind cross-member (X).



Section 2: Assembly (continued)

Control cable bracket assembly

1. Using a 3/8 wrench, secure the cable brackets (R) to the insides of the handlebars with one 1/4-20 x 7/8 hex bolts each.
2. Pull down on each cable so the control levers (P and Z) contact the handlebar. Insert the adjustment barrel (F) of the cable assemblies into the slots in the cable brackets (R). Position adjustment barrels on the cable assemblies so the cable brackets (R) are between the two nuts on the cable assembly adjustment barrels.

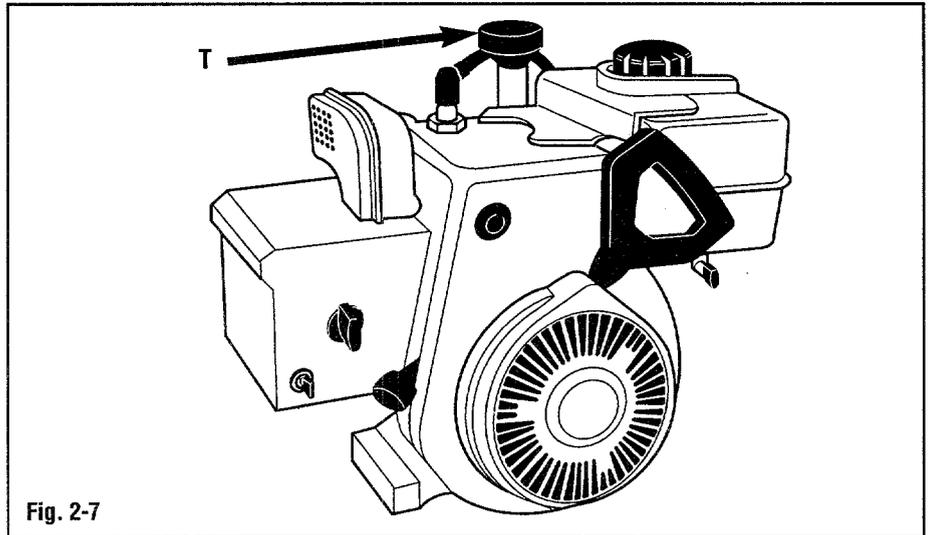


Fig. 2-7

Control cable bracket adjustment

The cable assemblies should be adjusted so the control levers are held against the handlebars under a slight tension. Adjust as follows:

1. Unscrew the top adjustment nut (S) on the cable adjustment barrel several turns.
2. Adjust the lower adjustment nut on the cable adjustment barrel until the control lever is held against the handlebar under a slight tension.
3. Using two 1/2" wrenches, hold the lower nut on the adjustment barrel and tighten the upper nut down until the cable bracket (R) is securely tightened against the cable bracket.
4. Repeat on the other side.

Tire pressure

Use an automotive-type tire pressure gauge. Inflate both tires evenly 15—25 PSI (103-171 Kpa).

Engine Oil



WARNING

DO NOT START THE ENGINE UNTIL ENGINE CRANKCASE HAS BEEN FILLED WITH OIL. FAILURE TO FOLLOW THIS INSTRUCTION WILL RESULT IN SERIOUS ENGINE DAMAGE.

1. To add engine oil, unscrew the dipstick (T, Fig. 2-7). Fill engine at dipstick opening with fresh oil. Refer to the engine owner manual for correct oil specifications.
2. The oil level on the dipstick should always be between the "ADD" and "FULL" marks. Wait ten minutes after the filling the crankcase for the oil to settle. Re-check the oil level and adjust as needed.

Auger gear case

The auger gear case was filled at the factory with the correct amount of SAE 90 gear oil. Check the level before using the unit. Refer "Lubrication" in the "Maintenance" section of this manual for transmission gear oil instructions.

Section 3 Controls

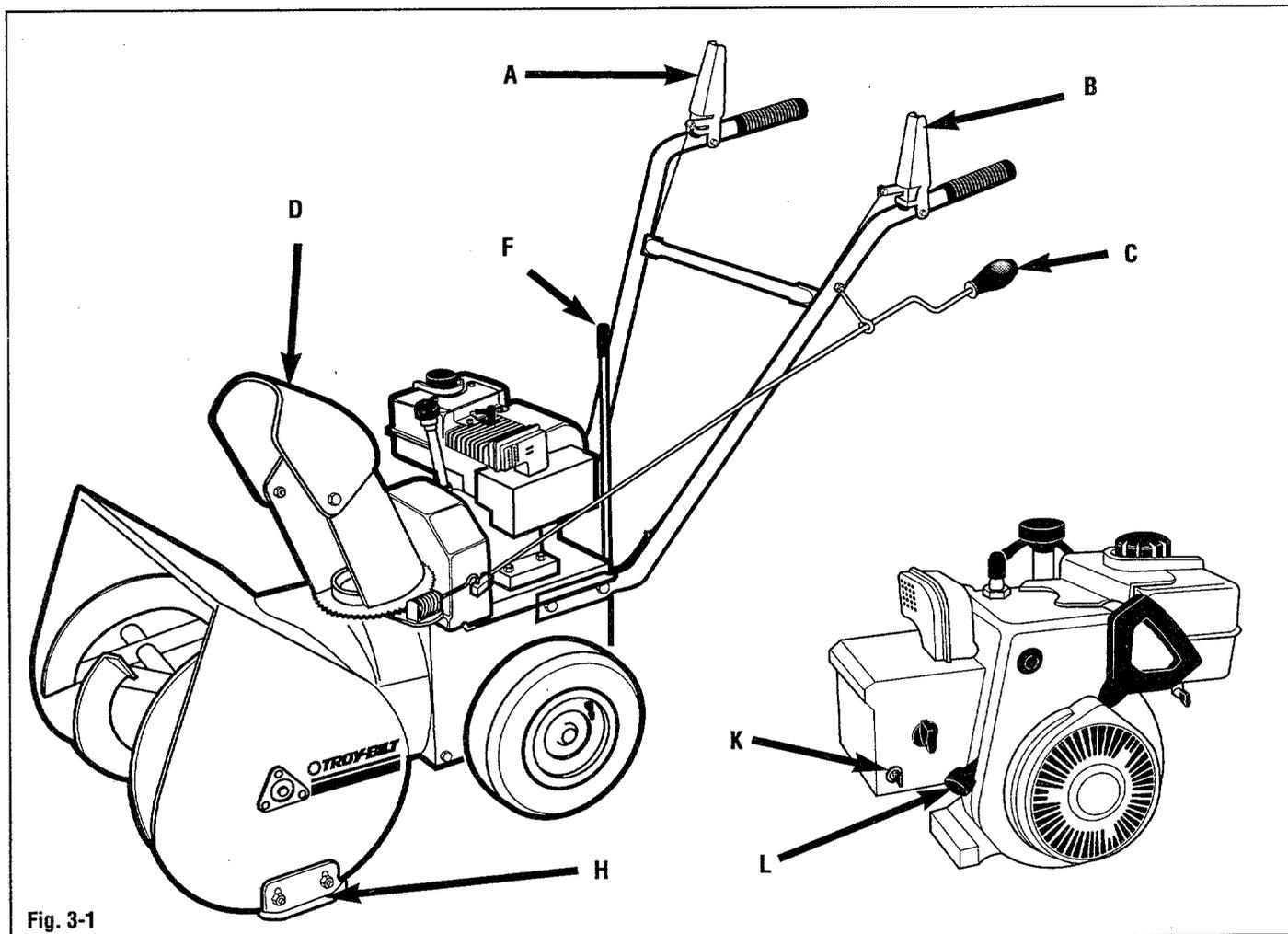


Fig. 3-1

This section defines the various controls on the unit. Refer to the following section, "Operation", for an explanation of the proper use of these controls.

A, Fig. 3-1—Auger drive control lever

Controls the engagement of the auger drive. When this lever is down against the handlebar and the engine is running, the auger will rotate.

B, Fig. 3-1—Wheel drive control lever

Controls the engagement of the wheel drive. When this lever is down against the handlebar and the engine is running, the wheels will rotate.

C, Fig. 3-1—Discharge chute control rod

Controls the direction the discharge chute is facing. Rotate this crank clockwise to turn the discharge to the right; rotate counter-clockwise to turn

the discharge chute to the left. Approximately 8 turns of this crank will move the discharge chute all the way from one side to the other.

D, Figs. 3-1 & 3-2—Discharge chute deflector cap

The angle of the discharge chute deflector cap controls the vertical angle of the snow discharge. Lift lever (E, Fig. 3-2) to adjust discharge chute deflector cap angle (make sure stud on lever is seated in one of the positioning holes on the discharge chute cap (D) after adjusting). The discharge chute deflector cap should

Section 3: Controls (continued)

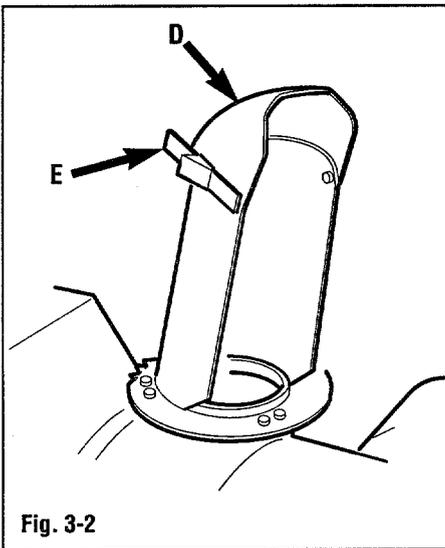


Fig. 3-2

usually be adjusted to a low angle, especially in windy conditions.

F, Figs. 3-1 & 3-3—Gear shift lever

Controls the selection of travel speeds: three forward, one neutral, and one reverse. The gear shift decal (G, Fig. 3-3) indicates the gear shift lever positions for the various travel speed settings.

H, Fig. 3-1—Skid shoes

Control the distance between the auger housing and the ground. This distance should be adjusted to clear any uneven or gravel surfaces. Refer to the following section, "Operation", for proper skid shoe adjustment information.

J, Fig. 3-4—Scraper blade

Designed to contact the ground to clear snow down to the pavement. Refer to the following section, "Operation", for proper adjustment information.

ENGINE CONTROLS

K, Fig. 3-1—Ignition key

This key has two positions: "⚡" and STOP. Rotating the key into the "⚡"

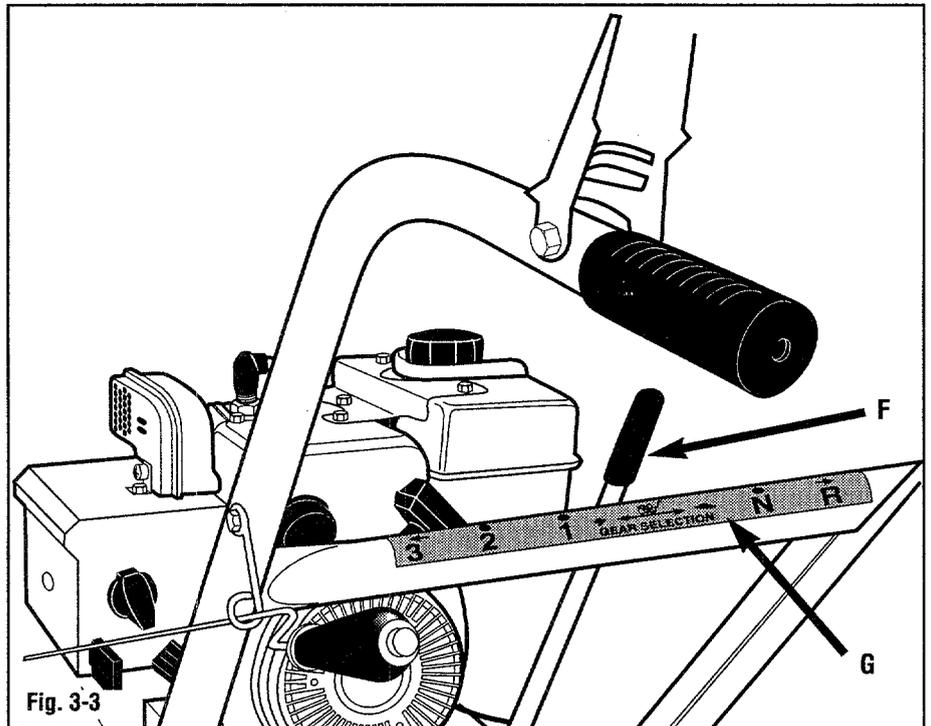


Fig. 3-3

position activates the engine ignition and allow the engine to be started. Rotating the key into the STOP position stops the engine. Always remove the ignition key from the ignition whenever the unit is not in use.

Note: the engine lubrication and cooling systems operate best at full throttle. Operating the engine at less than full throttle for extended periods can reduce the performance of this system.

L, Fig. 3-1—Throttle

Controls the speed of the engine. Always run the engine at full throttle (the "⚡" position).

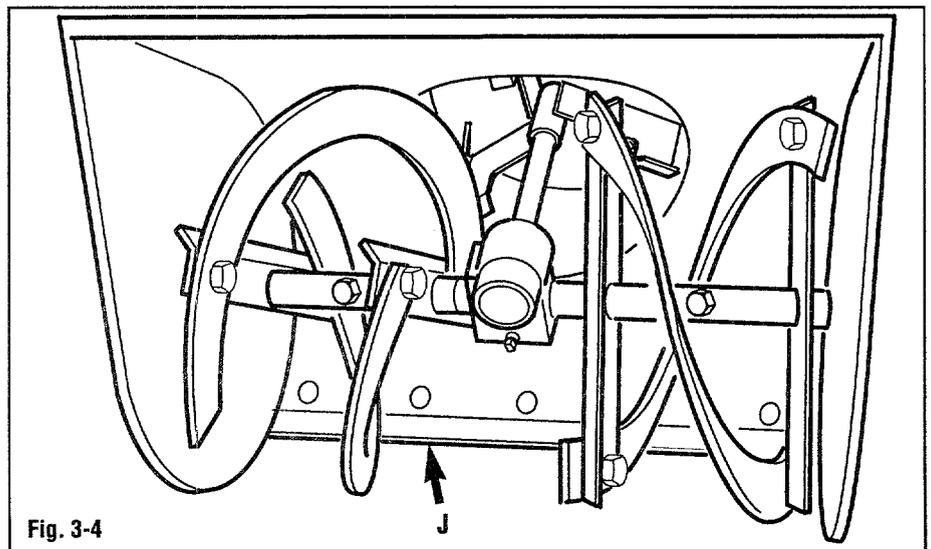


Fig. 3-4

Section 3: Controls (continued)

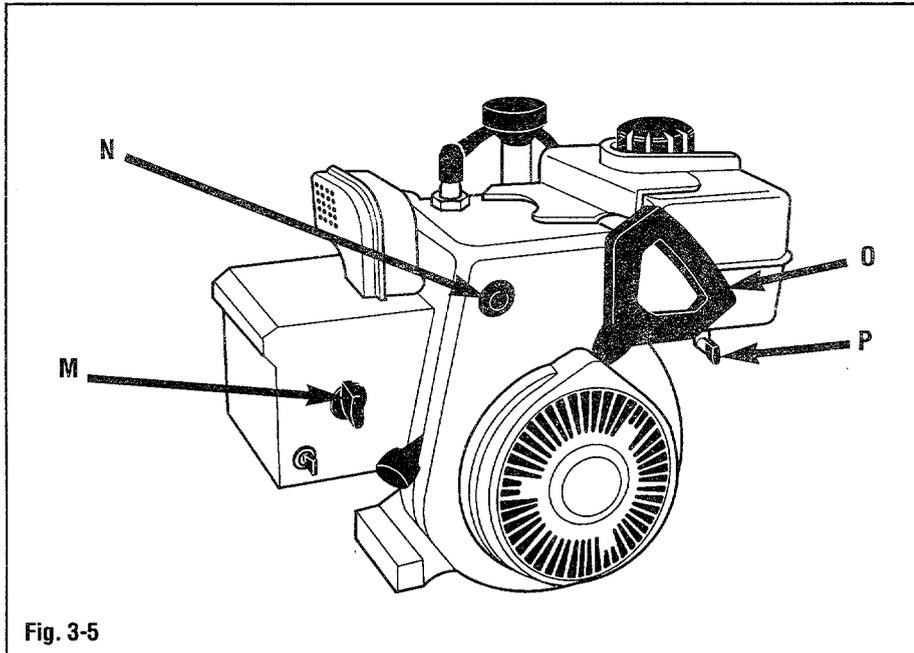


Fig. 3-5

M, Fig. 3-5—Choke knob

Rotating the choke knob **M** clockwise increases the amount of gasoline in the air/gasoline mixture that is fed into the engine. This is known as “choking” the engine. It is often necessary to “choke” a cold engine when starting. Refer to the following section, “Operation”, for proper choke knob operation information.

N, Fig. 3-5—Primer bulb

This control pumps a small amount of gasoline into the engine to aide starting. Refer to the following section, “Operation”, for proper primer bulb operating information.

O, Fig. 3-5—Recoil starter handle

This control is used to pull-start the engine. Refer to the following section, “Operation”, for proper recoil starter operating information.

P, Fig. 3-5—Fuel shut-off valve (if equipped)

This valve controls the flow of gasoline from the gasoline tank to the engine.

Refer to the following section, “Operation”, for proper fuel shut-off valve operating information.

120V Electric Starter (Optional)

Connect the 120V electric starter (mounted on top of the engine) cord to a 3-pronged, grounded 120V wall outlet. Push the starter button (on top of the electric starter) to start the engine. As soon as the engine starts, release the starter button.

The electric starter is thermally protected and automatically stops if overheated. Allow the engine and starter to cool between uses of the electric starter.

Review any safety and operation instructions which may be included with the electric starter kit.



WARNING

TO PREVENT ELECTRIC SHOCK:

- DO NOT USE THE 120V ELECTRIC STARTER IN THE RAIN.
- DO NOT STAND IN PUDDLES OR ON DAMP GROUND WHEN USING THE ELECTRIC STARTER OR WHEN CONNECTING THE ELECTRICAL CORD.
- CONNECT THE STARTER CORD ONLY TO TO A PROPERLY GROUNDED, 120V WALL OUTLET.

Section 4 Operation

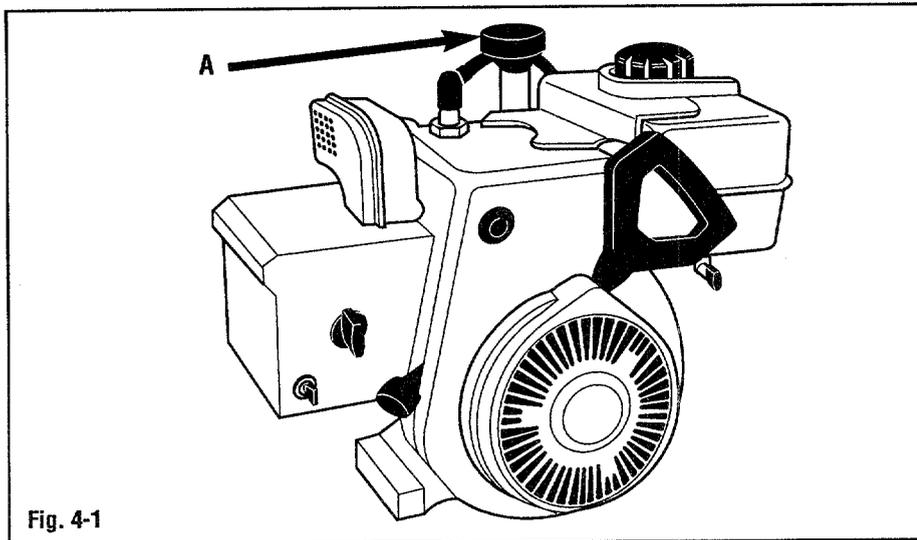


Fig. 4-1

Pre-operation checklist

1. Review Section 1, "Safety" and Section 3, "Controls" in this manual.
2. Check the unit for any loose or missing hardware. Tighten or replace as needed.
3. Check inside the auger housing and the discharge chute and remove any debris.
4. Check the engine oil level.
 - a. Move the unit onto a level surface.
 - b. Remove the engine oil dipstick (A, Fig. 4-1).
 - c. Wipe the oil from the dipstick with a clean cloth.
 - d. Screw the dipstick back into the engine.
 - e. Remove the engine oil dipstick (A, Fig. 4-1) again.

- f. The oil level should be between the "FULL" and the "ADD" marks on the dipstick. Refer to the engine owner manual for proper engine oil specifications.



WARNING

DO NOT START THE ENGINE UNTIL ENGINE CRANKCASE HAS BEEN FILLED WITH OIL. FAILURE TO FOLLOW THIS INSTRUCTION WILL RESULT IN SERIOUS ENGINE DAMAGE.

- 5 Remove the gasoline tank fill cap and check the level of gasoline in the gasoline tank.



WARNING

GASOLINE IS HIGHLY FLAMMABLE AND ITS VAPORS ARE EXPLOSIVE. NEVER REMOVE THE GASOLINE TANK FILL CAP OR ADD GASOLINE WHEN INDOORS OR WHEN THE ENGINE IS RUNNING OR HOT. WIPE UP SPILLED GASOLINE IMMEDIATELY. KEEP SMOKING MATERIALS, SPARKS OR FLAMES AWAY FROM THE FUEL TANK AND GASOLINE CONTAINERS.

Fill the fuel tank with fresh, clean unleaded gasoline with a minimum octane rating of 87. Leave 1/2" of space for fuel expansion. **DO NOT MIX OIL WITH GASOLINE!** Tighten the gasoline fill cap securely. Refer to the engine owner manual for additional gasoline information.

DO NOT MIX OIL WITH GASOLINE!

Section 4: Operation (continued)

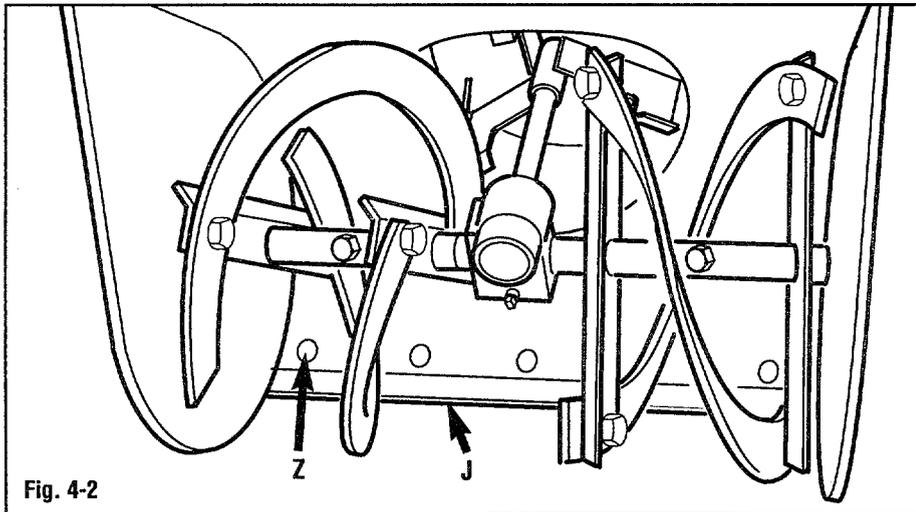


Fig. 4-2

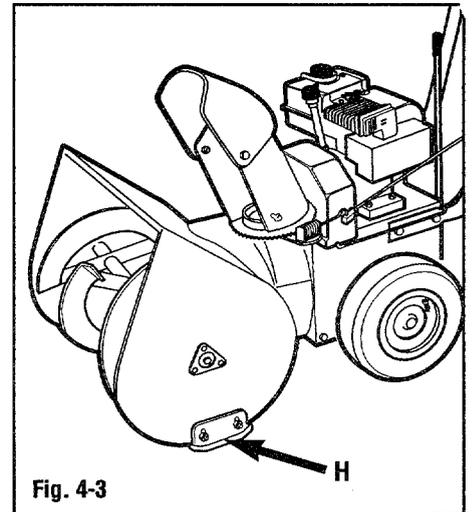


Fig. 4-3

6. The unit should be adjusted so the auger housing and the scraper blade (J, Fig. 4-2) are 1/8" above the surface to be cleared. If the unit is used to clear a gravel or uneven surfaces, this adjustment should be increased so gravel or other foreign objects are not scooped into the auger.

To adjust the auger housing/scraper blade height:

- Move the unit onto a level surface.
 - Loosen the hardware securing the skid shoes (H, Fig. 4-3).
 - Adjust the skid shoes (H) until they are in the correct position to support the auger housing and the scraper blade (Adjust both skid shoes the same to prevent uneven snow removal).
 - Tighten the hardware to lock the skid shoes (H) into the proper position.
7. The scraper blade (J, Fig. 4-2) can also be adjusted. Adjust the scraper blade (J) at the carriage bolts (Z, Fig. 4-2). Adjust the bottom edge of the scraper blade so it is parallel with the bottom edge of the auger.
8. Adjust the discharge chute deflector cap (D, Fig. 4-4) with lever (E) to the

desired angle of discharge. Usually keep the angle of the discharge deflector cap low, especially in windy conditions.

- Rotate the discharge chute control rod (crank) (C, Fig. 4-5) and check for binding.
- Check the auger drive and wheel drive control levers for freedom of movement.
- Check the tire pressure. Inflate both tires evenly to 15-20 PSI (103-137 Kpa).

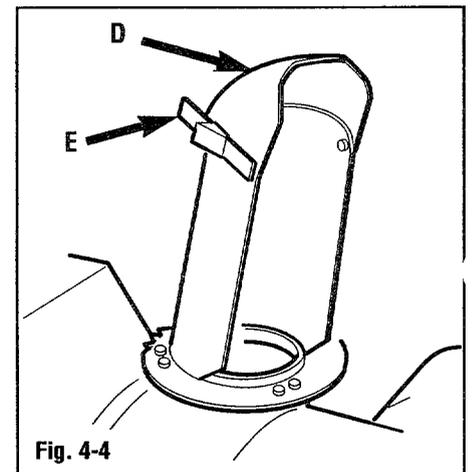


Fig. 4-4

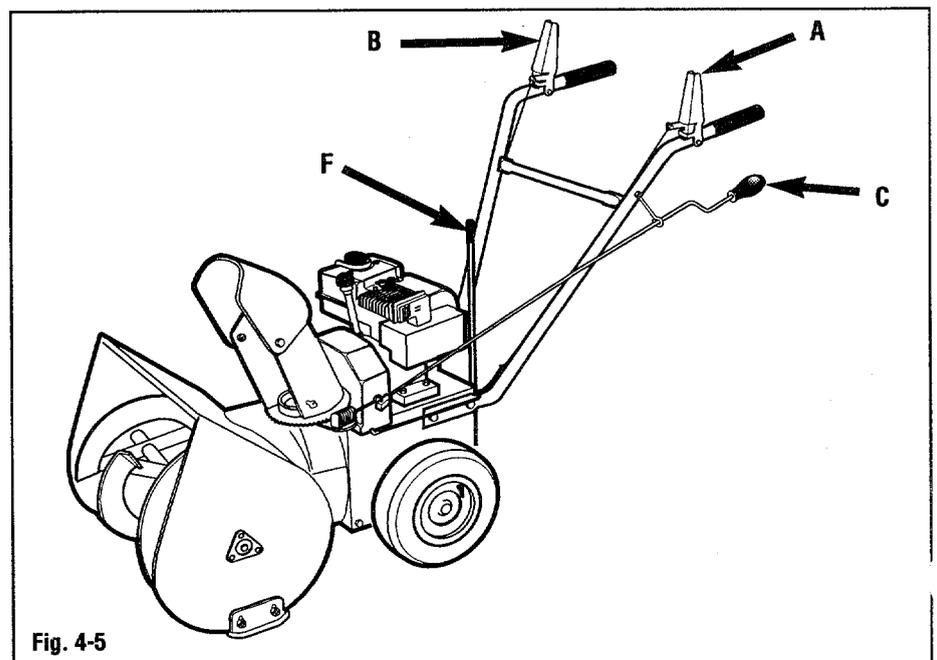


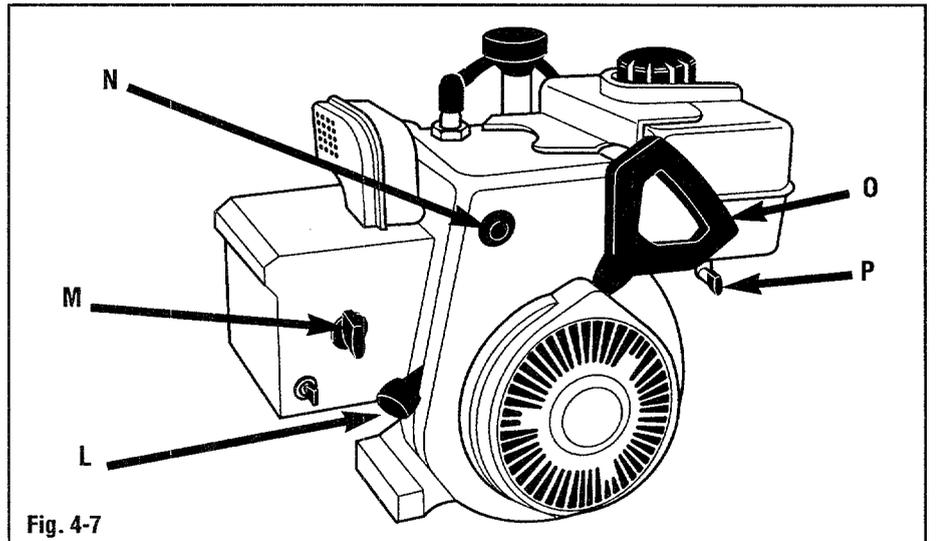
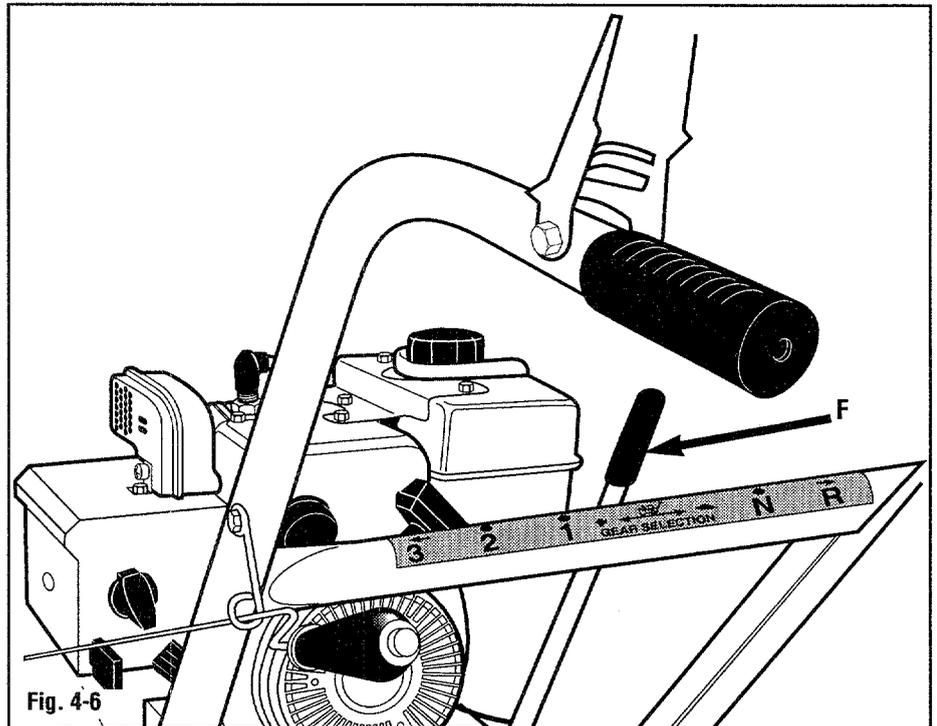
Fig. 4-5

Section 4: Operation (continued)

12. Spray silicone spray on the inside of the deflector chute, the chute discharge deflector cap, the auger housing, and on the augers. This will help prevent snow from sticking (do not spray silicone spray on rubber or plastic: damage may occur)
13. Re-connect the spark plug wire to the spark plug if needed.
14. Rotate the fuel shut-off valve (P, Fig. 4-7) to the "ON" position, if so equipped.

Starting the engine

1. Review Section 1, "Safety" and Section 3, "Controls".
2. Review the "pre-operation checklist", earlier in this section.
3. Move the unit outside to a well-ventilated, level area.
4. Move the gearshift lever (F, Fig. 4-6) into the neutral (N) position.
5. Insert the ignition key and rotate the keyswitch (K, Fig. 4-7) into the "ON" position.
6. If the engine is cold, move the choke knob "M" (M, Fig. 4-7) into the full choke position. **Note: Different temperature conditions may require different amounts of choking.**
7. Push the engine primer bulb (N, Fig. 4-7) two or three times if the engine is cold. If the engine is warm, press the primer bulb once.
8. Move the throttle lever (L, Fig. 4-7) into the "IDLE" position.
9. Make sure both cables leading to the drive control levers (A and B, Fig. 4-5) are slack.
10. Grasp the recoil starter handle (O, Fig. 4-7). Clear all obstacles from behind you.
11. Pull recoil starter handle rapidly to overcome engine compression, prevent kick-back and start the engine.



Stopping the engine

12. Do not release the recoil starter handle (O). This could damage the rewind mechanism in the starter. Allow the starter rope to rewind slowly back into the engine.
 13. Repeat steps 11 & 12 until the engine starts.
 14. Move the choke knob "M" (M) out of the full-choked position. Turn the choke off as the engine warms up.
 15. Allow the unit to adjust to the outside temperature before clearing snow.
1. Rotate the ignition keyswitch into the "STOP" position.

Section 4: Operation (continued)

Wheel drive engagement

1. Clear all obstructions from in front of the unit.
2. Stand behind the unit in the operating position.
3. Move the gearshift lever (F, Fig. 4-8) into the "1", or first gear, position.
4. Engage the wheel drive by squeezing the wheel drive control lever (B, Fig. 4-9) down against the handlebar.

Wheel drive disengagement

1. Release the wheel drive control lever (B).

Shifting gears



CAUTION

Transmission damage could occur if the gearshift lever (F, Fig. 4-8) is moved and the unit is in motion. Carefully follow the instructions below.

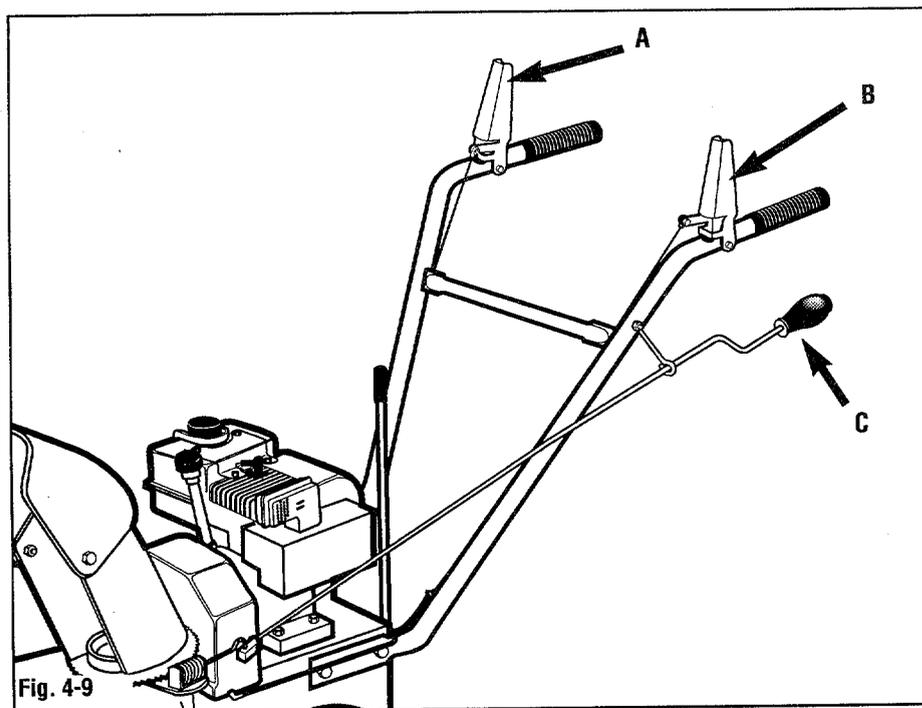
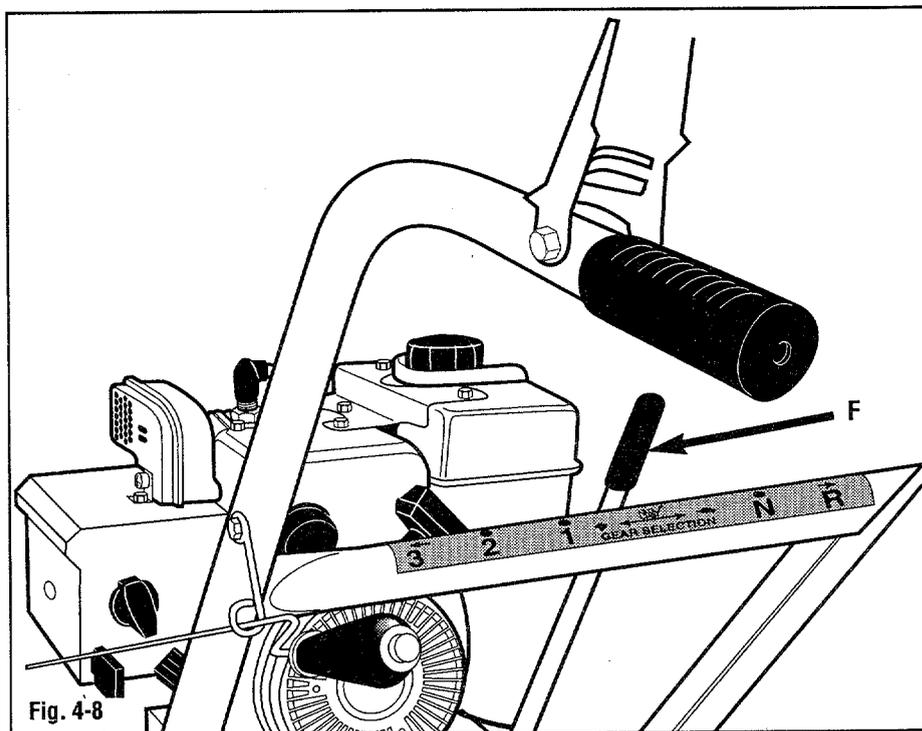
1. Release both the auger and wheel drive control levers (A & B, Fig. 4-9). Wait for the unit to come to a complete stop.
2. Move the gearshift lever (F, Fig. 4-8) into the desired position.

Reverse



WARNING

USE EXTREME CAUTION WHEN OPERATING THE UNIT IN REVERSE. LOOK DOWN AND BEHIND YOU BEFORE AND WHILE OPERATING IN REVERSE. CLEAR ALL OBSTACLES AWAY FROM THE UNIT BEFORE OPERATING IN REVERSE. BE PREPARED FOR THE UNIT TO MOVE TOWARD YOU WHEN THE GEARSHIFT LEVER (F) IS IN THE REVERSE (R) POSITION.



Section 4: Operation (continued)

Auger drive engagement

1. Check inside the auger housing for any debris.



WARNING

STOP THE ENGINE AND REMOVE THE SPARK PLUG WIRE FROM THE SPARK PLUG BEFORE REMOVING ANY DEBRIS FROM THE AUGER HOUSING.

2. Remove any debris from inside the auger housing.
3. Adjust the discharge chute so it is not pointing at any persons, animals, buildings or vehicles.
4. Adjust the discharge chute deflector cap angle with lever (E, Fig. 4-11). The discharge chute deflector cap should be adjusted to a low angle, especially in windy conditions.
5. Engage the auger drive by squeezing the auger drive control lever (A, Fig. 4-9) down against the handlebar.

Auger drive disengagement

1. Release the auger drive control lever (A, Fig. 4-9).

Emergency Stopping

1. Release both the auger and wheel drive control levers (A and B, Fig. 4-9). Wait for the unit to come to a complete stop.
2. Rotate the ignition keyswitch (K, Fig. 4-10) into the "STOP" position.

Stopping

1. Release both the auger and wheel drive control levers (A & B, Fig. 4-9). Wait for the unit to come to a complete stop.
2. Move the gearshift lever (F, Fig. 4-8) into the neutral position.
3. Move the throttle lever (L, Fig. 4-7) into the "—" position. Allow the

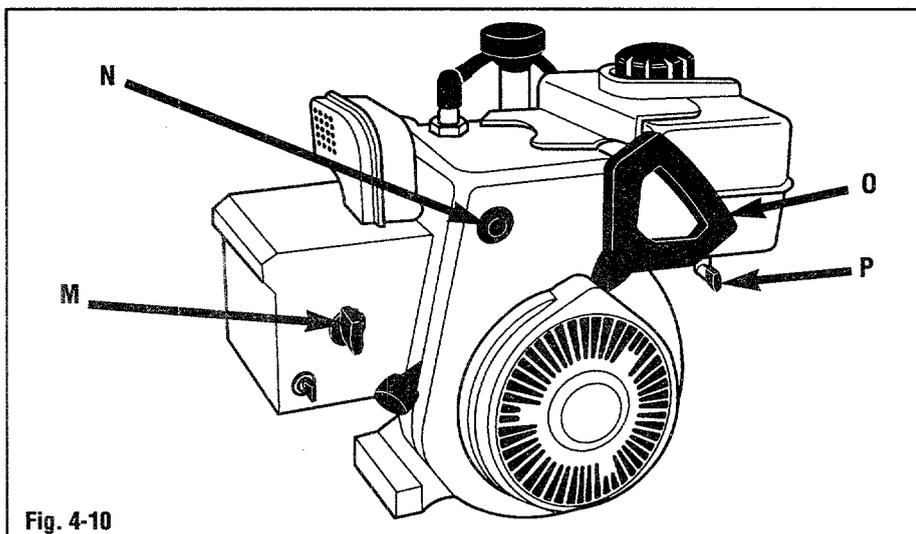


Fig. 4-10

- engine to idle for several minutes to melt and evaporate any snow on the engine.
4. Rotate the ignition keyswitch (K, Fig. 4-10) into the "STOP" position. Remove the ignition key.
5. Disconnect the spark plug wire from the spark plug.
6. To prevent the unit from freezing-up:
 - a. Remove any water from the floor of the auger housing.
 - b. Move the throttle lever (L, Fig. 4-10) into the "←" position.
 - c. move the choke knob "N" (M, Fig. 4-10) into the full choked position.
 - d. Rotate the fuel shut-off valve (P, Fig. 4-10) to the "OFF" position, if so equipped.

Transporting the unit

Release the auger drive lever (A, Fig. 4-9) to disengage the auger drive whenever the unit is being transported to the work site.

The unit is extremely heavy. Have at least one other person help you when loading or unloading the unit into a truck or trailer. Use ramps when loading/unloading the unit into a trailer or truck. Securely tie the unit to prevent it from shifting while in transit.

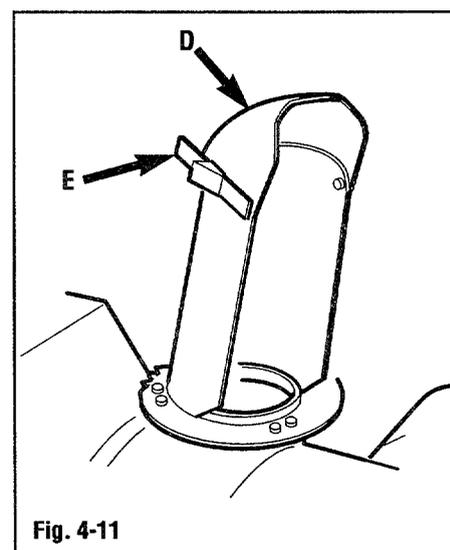


Fig. 4-11

Snowthrowing tips

- Run the engine at full throttle (the ← position).
- Spray silicone spray onto the augers and the inside of: the auger housing, the discharge chute, and the deflector to help prevent snow from sticking. Do not spray silicone spray on rubber or plastic: damage can result).
- Remove snow as soon as possible after a snowfall.
- Direct discharge downwind.
- If a smooth area is being cleared, adjust the skid shoes so the scraper blade is approximately 1/8" (3mm) from the ground.

Section 4: Operation (continued)

Rotate discharge so snow is always discharged in this direction.

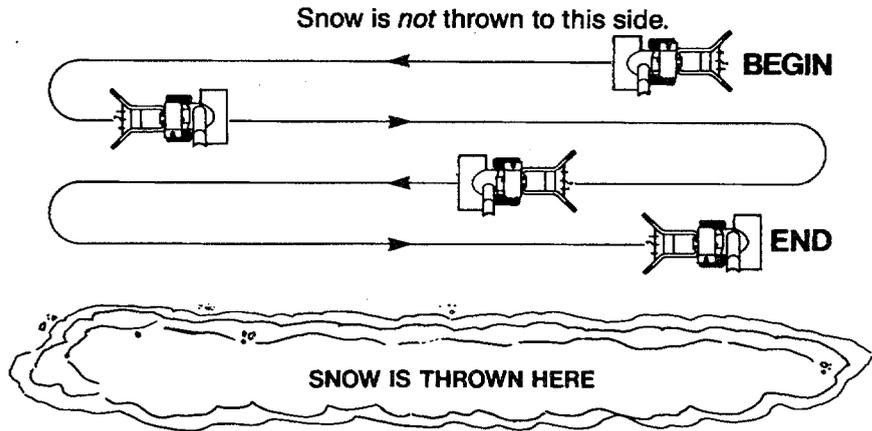


Fig. 4-12

Discharge chute direction stays the same except when turning.

Snow is thrown to each side.

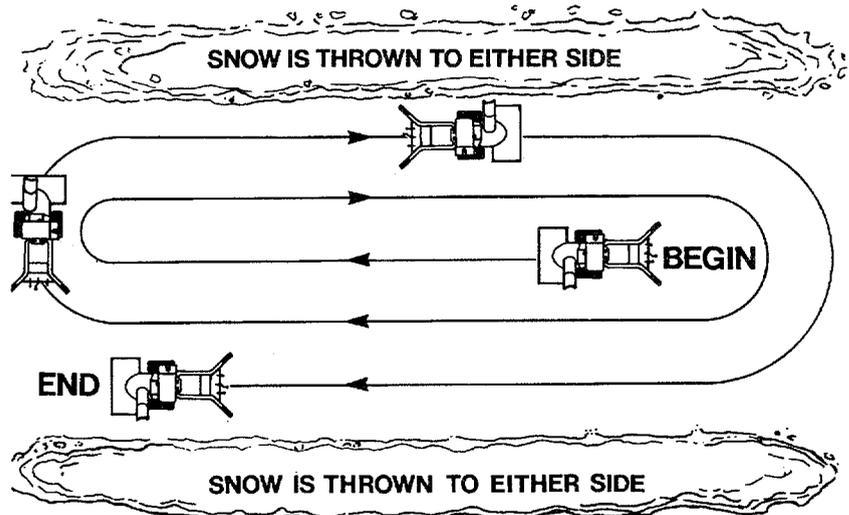


Fig. 4-13

- If a rough or gravel area is being cleared: adjust the skid shoes so the scraper blade clears the rough or gravel surface.
- Use low travel speeds for safety and to prevent overloading the unit.



DANGER

DO NOT USE YOUR HANDS OF FEET TO DISLodge ANY SNOW FROM THE AUGER, INSIDE THE AUGER HOUSING OR INSIDE THE DISCHARGE CHUTE. ANY CONTACT WITH THE IMPELLER WILL CAUSE SERIOUS INJURY. STOP THE ENGINE AND REMOVE THE SPARK PLUG WIRE FROM THE SPARK PLUG AND USE A LONG (AT LEAST 3' [100 CM]) WOODEN STICK TO UNCLOG THESE AREAS.



WARNING

THOROUGHLY INSPECT THE AREA THE SNOWTHROWER WILL BE USE BEFORE THE FIRST SNOWFALL. REMOVE ALL DOORMATS, SLEDS, BOARDS, WIRES AND OTHER DEBRIS TO PREVENT INJURY FROM THROWN OBJECTS.

Section 4: Operation (continued)

Snow throwing patterns

Use the pattern shown in Fig. 4-12 when snow can only be thrown to one side of the area being cleared.

Begin removing snow from the side the snow cannot be thrown to. Direct the discharge away from this side. When turning the unit at the end of each pass, rotate the discharge chute so it continues to throw snow only to one side.

Use the pattern shown in Fig. 4-13 when throwing snow to both sides. Change the direction of the discharge chute only when turning at the end of each pass.

Section 5 Maintenance



DANGER

BEFORE PERFORMING ANY MAINTENANCE ON THE UNIT, STOP THE ENGINE AND WAIT FOR ALL MOVING PARTS TO STOP. DISCONNECT SPARK PLUG WIRE FROM SPARK PLUG.

READ AND UNDERSTAND THIS ENTIRE MANUAL BEFORE PERFORMING ANY MAINTENANCE ON THE UNIT

FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN PERSONAL INJURY OR PROPERTY DAMAGE.

Engine oil

Check the engine oil level each time before starting the unit and after each 5 hours of operation.

To check the engine oil level:

1. Stop the engine and wait for all moving parts to stop. Disconnect the spark plug wire from the spark plug.
2. Move the unit onto a level surface.
3. Remove the engine oil dipstick (A, Fig. 5-1).
4. Wipe the oil from the dipstick with a clean cloth.
5. Screw the dipstick back into the engine.
6. Remove the engine oil dipstick (A, Fig. 5-1) again.
7. The oil level should be between the "FULL" and the "ADD" marks on the dipstick. Refer to the engine owner manual for proper engine oil specifications.

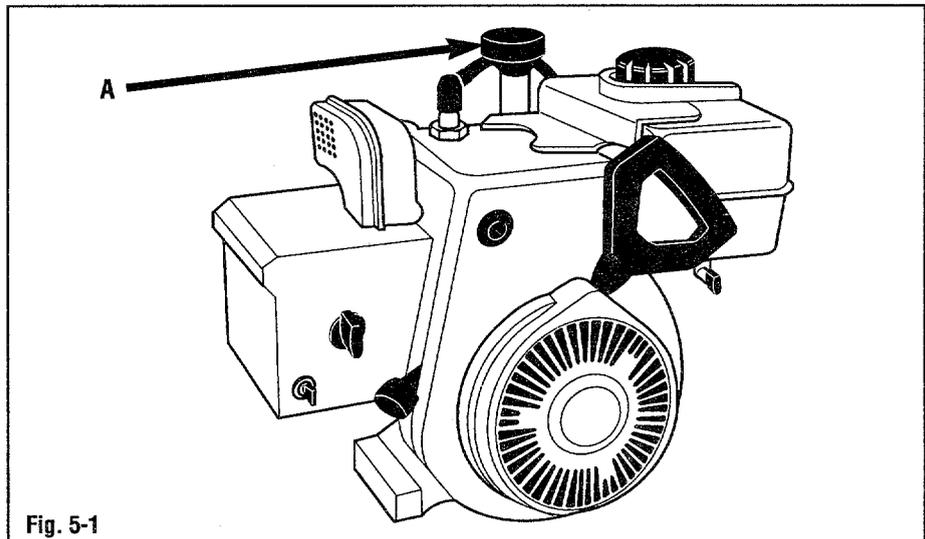


Fig. 5-1

To change the engine oil:

1. Start the engine and allow it to warm up to operating temperature.
2. Stop the engine and wait for all moving parts to stop. Disconnect the spark plug wire from the spark plug.
3. Move the unit onto a level surface.
4. Remove the engine oil dipstick (A, Fig. 5-1) to allow venting for the engine crankcase.
5. Place a container with a minimum capacity of one quart below the oil drain opening.
6. Fold a piece of cardboard or aluminum foil into a shallow "V", and position it so the oil will drain through it into the container.
7. Remove the oil drain plug and allow the oil to drain into the container.
8. When all the oil has drained from the engine, securely replace the oil drain plug.
9. Refer to the engine owner manual for correct engine oil specifications. Fill the engine through the oil dipstick opening with the correct type and amount of oil as indicated in the engine owner manual.

10. Securely replace the oil dipstick.

NEVER DISPOSE OF WASTE OIL ON THE GROUND, DOWN A DRAIN OR INTO A LAKE, POND OR STREAM. CONTACT LOCAL ENVIRONMENTAL AUTHORITIES FOR PROPER OIL DISPOSAL INSTRUCTIONS.

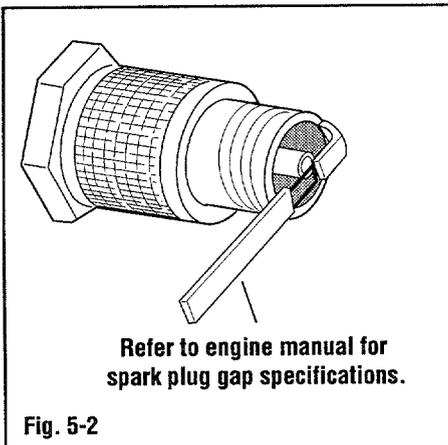


WARNING

GASOLINE IS HIGHLY FLAMMABLE AND ITS VAPORS ARE EXPLOSIVE. NEVER ADD FUEL WHEN INDOORS OR WHEN ENGINE IS RUNNING OR HOT. WIPE UP SPILLED GASOLINE IMMEDIATELY. KEEP SMOKING MATERIALS, SPARKS OR FLAMES FAR FROM FUEL TANK AND CONTAINERS.

Ignition system

The engine has an electronic ignition system which does not use points or a condenser. The spark plug is the only item requiring maintenance in this system.



Refer to engine manual for spark plug gap specifications.

Fig. 5-2

Spark plug (Fig.5-2)

Annually or every 100 hours of operation, remove and inspect the spark plug. Reset the gap to the specifications indicated in the engine owners manual.

Best results are obtained with a new plug. Replace the plug if it is cracked, badly worn or otherwise damaged. Refer to the engine owners manual for correct spark plug specifications. **USING AN INCORRECT PLUG CAN DAMAGE THE ENGINE.**

Under good operating conditions, the plug will have a light gray coating or a tan deposit. A dull white, blistered coating could indicate an over-rich fuel mixture caused by a clogged air cleaner or improper carburetor adjustment.

Note: Do not clean the park plugs in machines which use abrasive grit. Clean spark plugs by scraping or wire brushing or washing with a commercial solvent.

Engine air cleaner

Refer to the engine owner manual for engine air cleaner maintenance instructions.

Carburetor

The carburetor has been adjusted at the factory and should not require additional adjustment. If a black exhaust

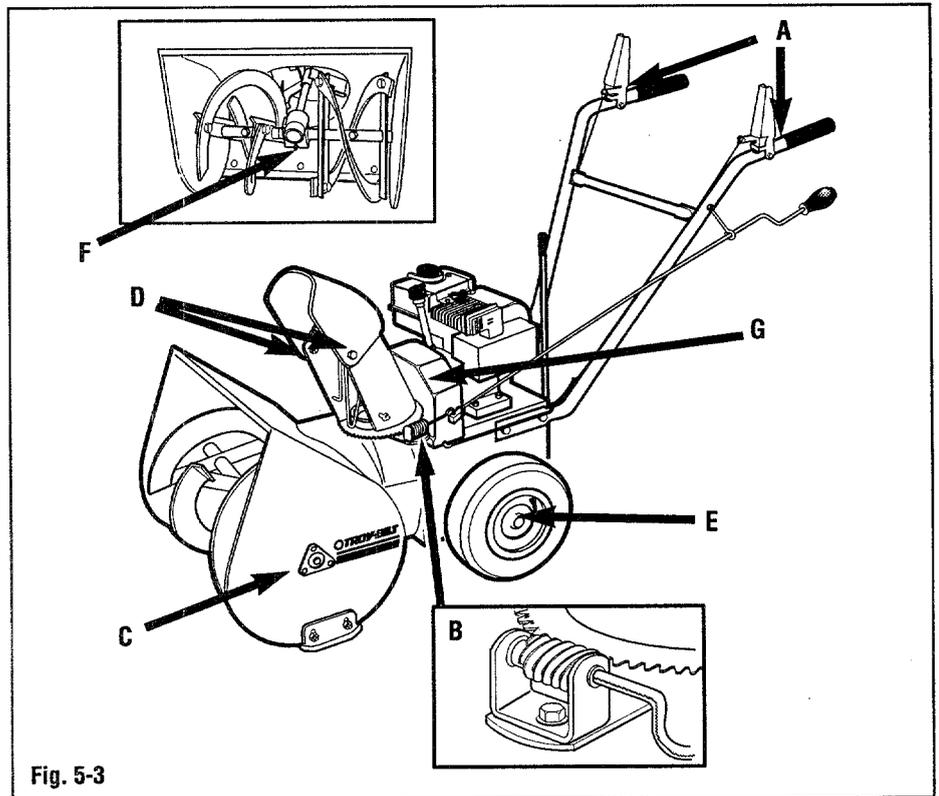


Fig. 5-3

is noticed, inspect the air cleaner first. An over-rich mixture is usually caused by a poorly service or clogged air cleaner element, not an improperly adjusted carburetor. Contact your dealer or our service department for additional carburetor information.

Lubrication

Lubricate the unit at the beginning and the end of each season. This will prepare the unit for peak performance for the first snowfall and will prevent corrosion at friction points during the off-season.

1. Use clean engine oil or a silicone spray to lubricate the control lever pivot points (A, Fig. 5-3).
2. Clean any dirt off the worm gear and the toothed part of the flange (B) at the bottom of the discharge chute. Apply multi-purpose grease to the worm gear and the toothed part of the flange.
3. Use clean engine oil to lubricate the bearings on each side of the auger shaft. Wipe off any excess oil.
4. Use clean engine oil or a silicone spray to lubricate the deflector cap pivot points (D).
5. Securely block the unit and remove the wheels. Apply multi-purpose grease to the axle shaft (for easier wheel removal).
6. Move the unit to a level area and inspect the auger gear case oil level as follows:
 - a. Remove the drain plug (F) from the auger gear case: oil should just begin to flow out of the hole.
 - b. Inspect the oil for grit and burned odors. Fill as needed with SAE 90 gear oil.
 - c. Replace and tighten the drain plug (F) on the auger gear case.

Section 5: Maintenance (continued)

Wheel drive cable adjustment



DANGER

BEFORE PERFORMING ANY MAINTENANCE ON THE UNIT, STOP THE ENGINE AND WAIT FOR ALL MOVING PARTS TO STOP. DISCONNECT THE SPARK PLUG WIRE FROM THE SPARK PLUG.

READ AND UNDERSTAND THIS ENTIRE MANUAL BEFORE PERFORMING ANY MAINTENANCE ON THE UNIT.

FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN PERSONAL INJURY OR PROPERTY DAMAGE.

1. Remove the two bolts securing the belt cover (G, Fig. 5-4). Remove the belt cover (G).
2. Push the idler pulley (J, Fig. 5-5) until the wheel drive belt (M) is tight.
3. Adjust idler stop (K) at nut (L) until there is a 3/8" (10mm) gap between the outer edge of the idler stop (K) and the inside edge of the frame. Tighten the nut (L) securely after adjusting.
4. When the wheel drive control lever is released (B, Fig. 5-4), cable (N, Fig. 5-5) should be under a slight tension. Adjust, if needed, as follows:
 - a. Loosen the locking nut (O, Fig. 5-6) on the left cable adjuster several turns.
 - b. Adjust cable tension by rotating the adjustment nut (P) until cable (N, Fig. 5-5) is under a slight tension when the wheel drive control lever (B, Fig. 5-4) is released.
 - c. Hold adjustment nut (P, Fig. 5-6) and securely tighten locking nut (O) when the adjustment is complete.
5. If the spark plug wire is connected to the spark plug, disconnect it.

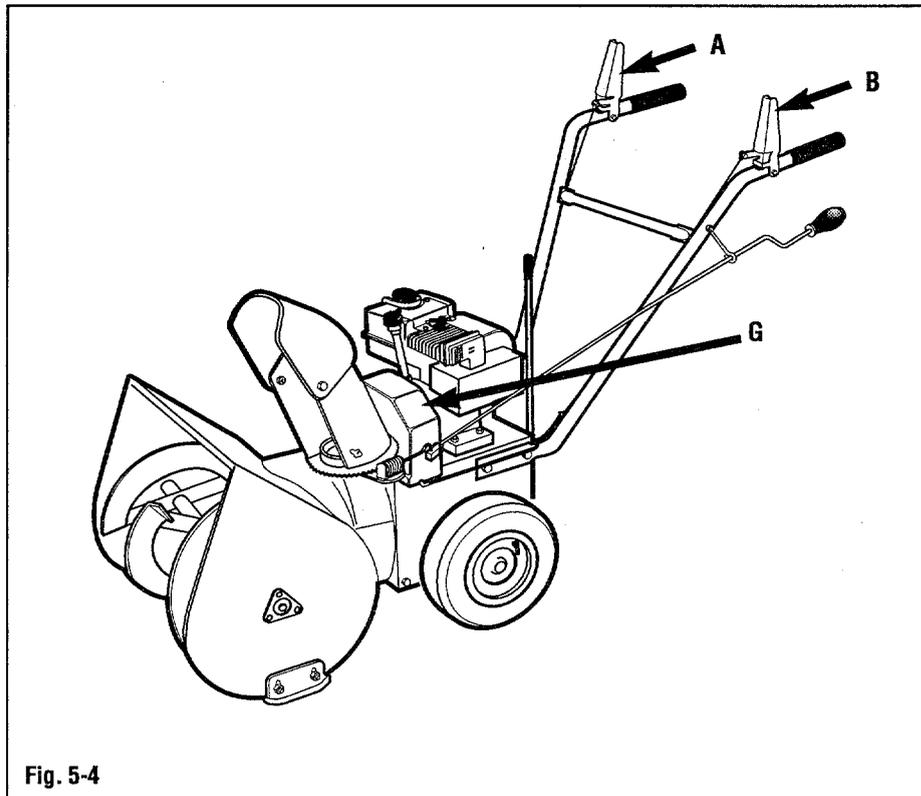


Fig. 5-4

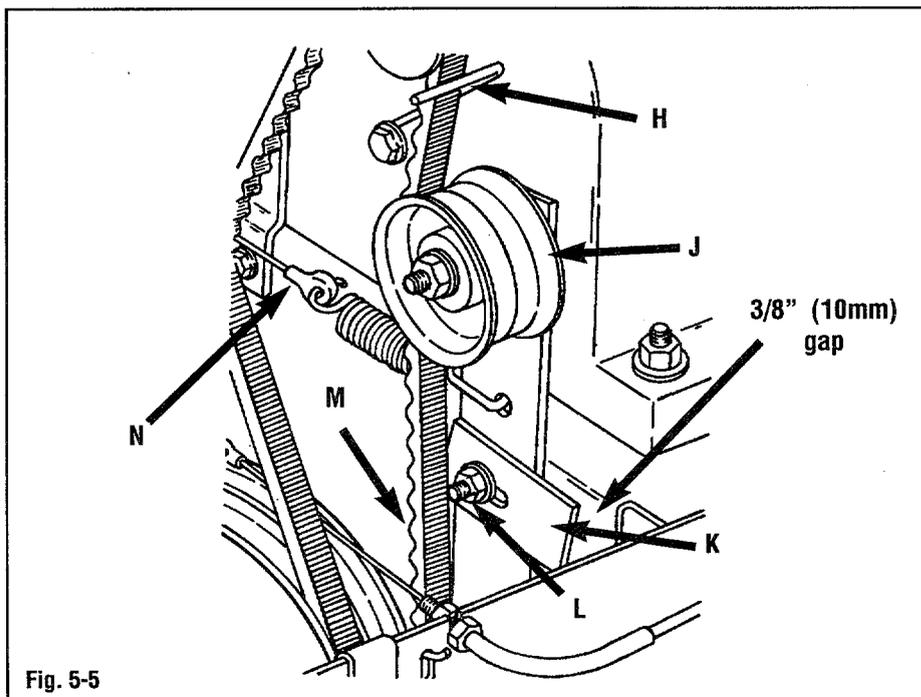


Fig. 5-5

6. Grasp the recoil starter handle and clear all obstructions from behind you.
7. Pull the recoil starter handle rapidly while watching belt (S, Fig. 5-7). If the belt (S) moves, decrease the 3/8" (10mm) gap set in step 3 by 1/16" (1mm) and repeat steps 6 & 7.
8. Position the belt cover back on the unit (G, Fig. 5-4) and secure with the two screws removed earlier.

Section 5: Maintenance (continued)

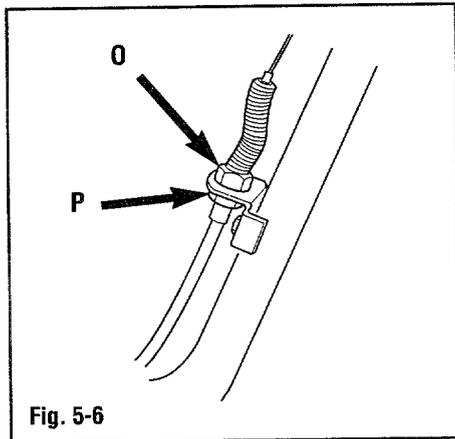


Fig. 5-6

Wheel drive belt replacement

REMOVAL:

1. Remove the two bolts securing the belt cover (G, Fig. 5-4). Remove the belt cover (G).
2. Remove bolt (W, Fig. 5-8) securing the worm gear and support (V) to the unit. Remove the worm gear and support (V).
3. Remove the four flange screws (X, Fig. 5-7) securing the auger housing and the frame/handlebar assembly together.
4. Carefully separate the auger housing from the frame/handlebar assembly. Remove the auger drive belt (S) from the drive pulley on the engine (T). Loosen any belt guides (U), if necessary to remove belt (S) from pulley (T). Prop the handlebars on a solid, stable object, such as a workbench.
5. Remove the wheel drive belt (R). Loosen any belt guides, if needed, to remove belt (R).

INSTALLATION:

1. Position the wheel drive belt (R), around the transmission pulley and the drive pulley (Y) on the engine.

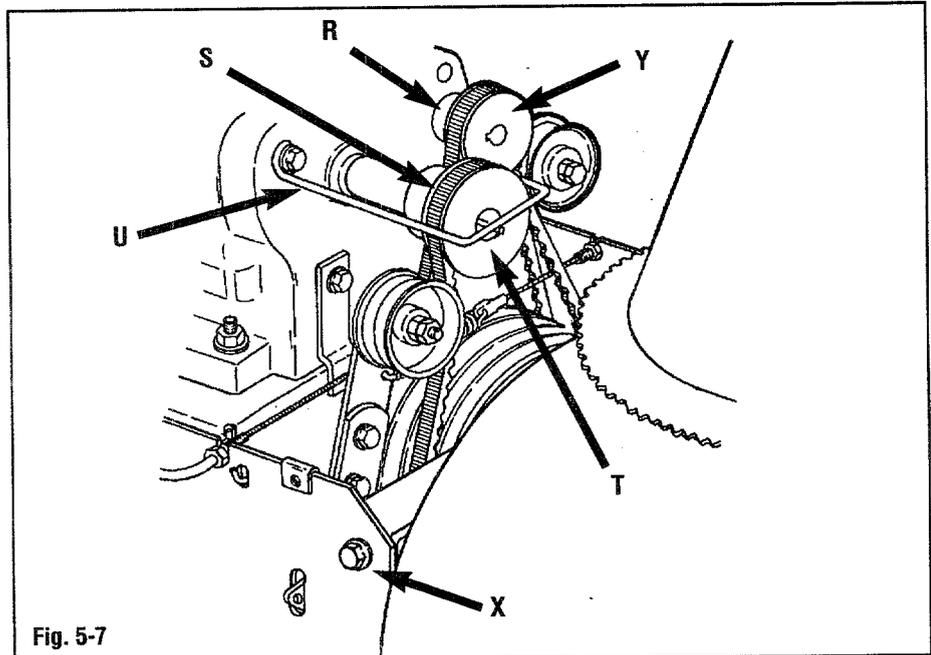


Fig. 5-7

2. Adjust and tighten any belt guides loosened earlier during step 5, "REMOVAL". Adjust the belt guides 1/16" (1mm) away from the wheel drive belt (R) when the belt is tight.
3. Move the auger housing and the frame/handlebar assembly together and position the auger drive belt (S) around the drive pulley on the engine (T).
4. Secure the auger housing and the frame/handlebar assembly together with the four flange screws (X) removed earlier.
5. Adjust and tighten any belt guides (U) loosened earlier during step 4, "REMOVAL". Adjust the belt guides 1/16" (1mm) away from the auger drive belt (S) when the belt is tight.
6. Position the worm gear and support (V, Fig. 5-8) back in place on the unit. Secure the worm gear and support with bolt (W).

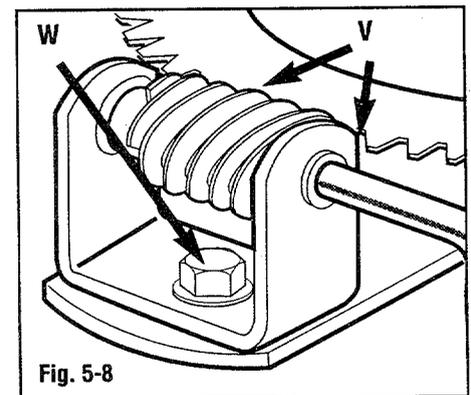


Fig. 5-8

7. Rotate the chute control crank and check for binding. Reposition the worm gear and support (V), as needed, for smooth operation.
8. Adjust the wheel drive cable as instructed earlier in this section.
9. Position the belt cover (G, Fig. 5-4) back on the unit and secure with the two bolts removed earlier.

Auger drive cable adjustment

1. Remove the two bolts securing the belt cover (G, Fig. 5-4). Remove the belt cover (G).

Section 5: Maintenance (continued)

2. Push idler arm pulley (A, Fig. 5-9) tight against belt (S). Insert a 5/32" (3mm) diameter pin into the hole in the brake arm (B, Fig. 5-9). The pin should be held against the outside of the frame.
3. Loosen bolts(C).
4. Push the idler pulley (A, Fig. 5-9) inward until the auger belt (S) is tight.
5. Tighten bolts (C).
6. To check the adjustment:
 - a. Remove the pin from the brake arm (B).
 - b. Push the idler pulley (J, Fig. 5-9) inward until the auger belt (S) is tight.
 - c. Check the hole in the brake arm (B). The inside of the hole in the brake arm should be even with the outside edge of the frame.

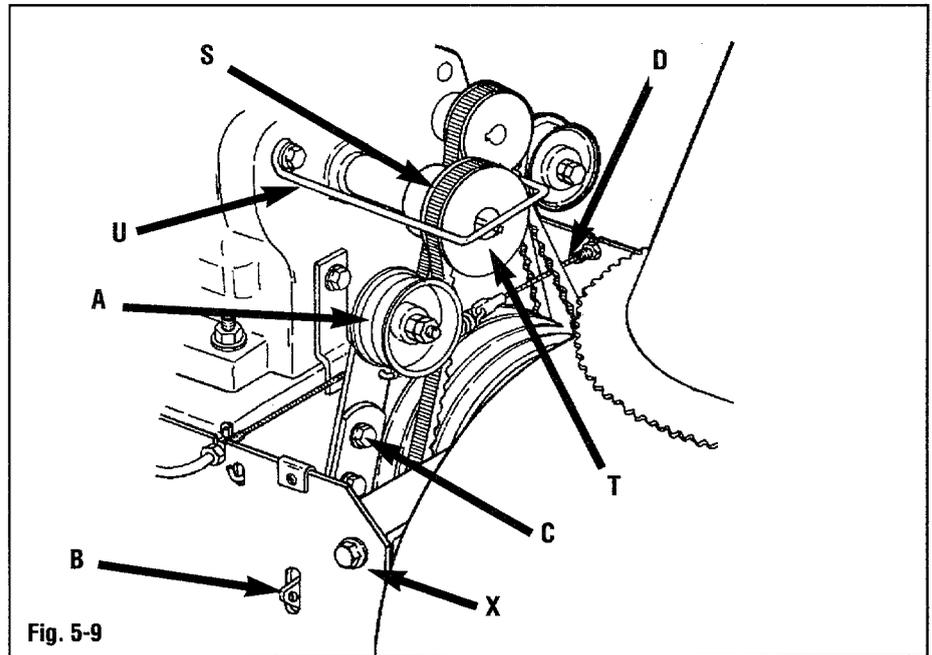


Fig. 5-9

7. When the auger drive control lever is released (A, Fig. 5-10), the cable (D, Fig. 5-9) should be under a slight tension. Adjust, if needed, as follows:
 - a. Loosen locking nut (O, Fig. 5-11) on the right cable adjuster several turns.
 - b. Adjust the cable tension by rotating adjustment nut (P, Fig. 5-9) until cable (D, Fig. 5-9) is under a slight tension when the auger drive control lever (A, Fig. 5-10) is released.
 - c. Hold adjustment nut (P, Fig. 5-9) and securely tighten locking nut (O) when the adjustment is complete.
8. Position the belt cover (G, Fig. 5-10) back on the unit and secure with the two bolts removed earlier.

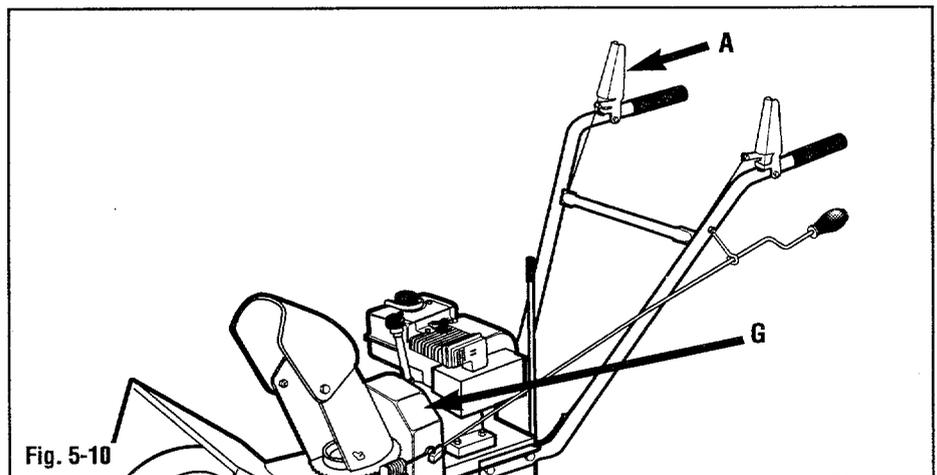


Fig. 5-10

2. Remove bolt (W, Fig. 5-11) securing the worm gear and support (W) to the unit. Remove the worm gear and support (W).
3. Remove the four flange bolts (X, Fig. 5-9) securing the auger housing and the frame/handlebar assembly together.
4. Carefully separate the auger housing from the frame/handlebar assembly. . Remove the auger drive belt (S) from the drive pulley on the engine (T). Loosen any belt guides (U), if needed to remove belt (S) from pulley (T). Prop the handlebars on a solid, stable object, such as a workbench.

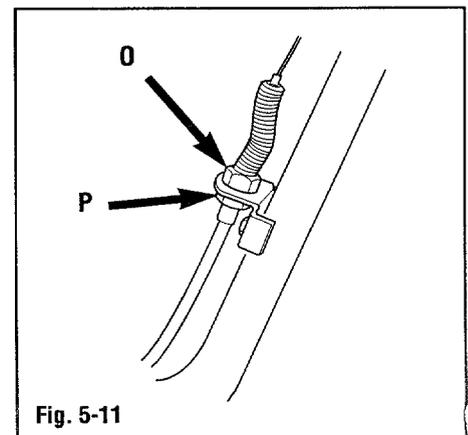


Fig. 5-11

Auger drive belt replacement

REMOVAL:

1. Remove the two bolts securing the belt cover (G, Fig. 5-10). Remove the belt cover (G).

Section 5: Maintenance (continued)

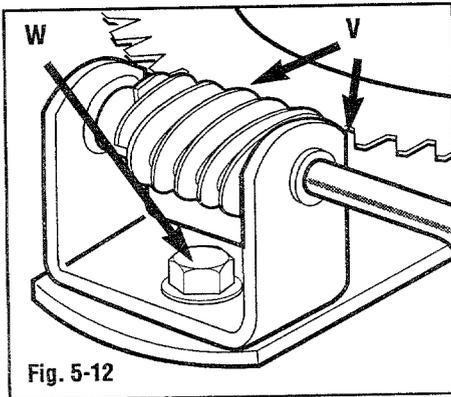


Fig. 5-12

5. Loosen the belt guides on the back of the auger housing, below the auger drive pulley. Rotate the guides to allow removal of the auger drive belt. Remove the auger drive belt.

INSTALLATION:

1. Position the auger drive belt around the auger drive pulley in the auger housing.
2. Adjust and tighten any belt guides loosened during step 5, "REMOVAL." Adjust the belt guides 1/16" (1mm) away from the auger drive belt when the belt is tight against the auger drive pulley.
3. Move the auger housing and the frame/handlebar assembly together and position the auger drive belt (S, Fig. 5-9) around the drive pulley on the engine (T).
4. Secure the auger housing and the frame/handlebar assembly together with the four flange bolts (X) removed earlier.
5. Adjust and tighten any belt guides (U) loosened earlier during step 4, "REMOVAL". Adjust the belt guides 1/16" (1mm) away from the auger drive belt (S) when the belt is tight.
6. Position the worm gear and support (V, Fig. 5-12) back in place on the unit. Secure the worm gear and support with bolt (W).
7. Rotate the chute control crank and check for binding. Reposition the worm gear and support (V) as needed for smooth operation.

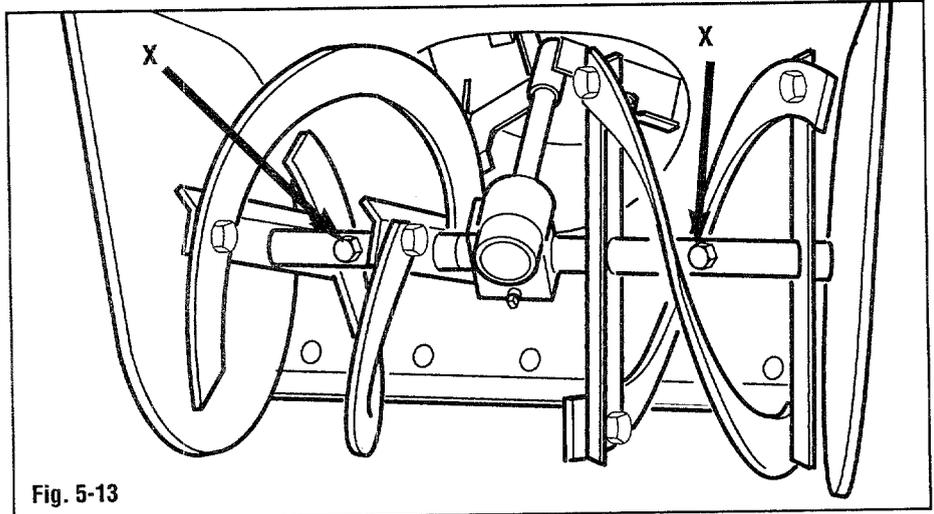


Fig. 5-13

8. Adjust the auger drive cable as instructed earlier in this section.
9. Position the belt cover (G, Fig. 5-10) and secure with the two bolts removed earlier.

Auger shear bolts

The auger shear bolts (X, Fig. 5-13) are designed to shear if the auger becomes jammed. This prevents damage to other parts of the unit. Replace these shear bolts with only original equipment replacements (part number 1720515), and tighten to a torque value of 11 ft. lbs. (15 Nm).



CAUTION

USING ANYTHING BUT ORIGINAL EQUIPMENT SHEAR BOLTS COULD RESULT IN DAMAGE TO THE UNIT.

Off-season storage

When storing the unit for more than 90 days, follow these procedures to help keep the unit in good condition for future use:

- Clean dirt, grime and grease from the unit and engine.
- Perform routine lubrication as instructed earlier in this section.

- Add a fuel stabilizer to the fuel tank, according to the instructions provided with the stabilizer. Avoid leaving non-stabilized fuel in the fuel tank for longer than 30 days because gum and other deposits can form which could foul the carburetor and fuel line.
- If the unit is equipped with a fuel shut-off valve, rotate the valve to the "OFF" position.
- Change the engine oil.
- Remove the spark plug and squirt 1/2 ounce of engine oil into the spark plug hole. Hold a rag over the hole (be careful to prevent the rag from entering the hole). Slowly pull the recoil starter several times to coat the cylinder wall with oil. Re-install the spark plug, but leave the spark plug wire disconnected from the spark plug.
- Thoroughly inspect the unit for any loose, damaged, or missing parts. Repair or replace the parts as necessary.
- Check all nuts, bolts and other fasteners for tightness and tighten as necessary.
- Touch-up scratches and chipped paint to prevent corrosion.
- Store the unit on a level surface, out of the reach of children.

Optional Kits and Specifications

Optional Kits		
Kit	Description	Part/Model Number
Drift Slicers	Aids the removal of deep snow	1720887001
Electric Start Kit	Allows starting with just a turn of a key	6848
Tire Chains	Aids traction on icy surfaces	1756276
Service Kit	Spark plug, belts, fuel stabilizer, lubricant, shear bolts, etc.	1771730

To order the kits listed above, contact your dealer or call or write to the addresses listed on page 3, under "Customer Service".

Specifications	
Engine Model	Tecumseh Model HSSK50
Engine Type	4-cycle horizontal shaft
RPM (Revolutions per Minute)	3600
Impeller Speed (RPM)	1200
Auger Speed (RPM)	120
Travel Speed	0.5 to 2.5 mph (0.8 to 4 K/hr)
Weight	160 lbs. (72.5 Kg)
Width	21" (53.5 cm)

Troubleshooting

TROUBLE	PROBABLE CAUSE	CORRECTION
Engine will not start	Ignition key into the "STOP" position Spark plug wire disconnected Fuel tank empty Fouled spark plug Throttle in "IDLE" position Engine not primed enough Engine primed too much Fuel shut-off valve closed Carburetor/fuel line clogged	Rotate ignition key into the "🔑" position Connect spark plug wire to spark plug Fill fuel tank Service or replace spark plug Move the throttle into the "👉" position Push the primer button several more times Rotate the choke knob to the "NO CHOKE" position; position the throttle in the "IDLE" position. Pull the recoil starter several times to burn off excess fuel. Proceed with normal starting Open fuel shut-off valve See your local engine dealer
Engine is difficult to start	Incorrect choke knob setting Throttle in the incorrect position Fuel shut-off valve closed Engine not primed enough Stale fuel in fuel tank	Reposition choke knob Move the throttle into the "👉" position Open fuel shut-off valve Push the primer button several more times Drain the fuel tank and fill with fresh gasoline
Engine runs rough	Loose spark plug Fouled spark plug Incorrect choke setting	Tighten spark plug Service or replace spark plug If the engine is warm, the choke knob should be in the "NO CHOKE" position
Engine overheats	Loose spark plug Dirty engine air (flywheel) screen Low engine oil level Dirty engine cooling fins	Tighten spark plug Clean engine air (flywheel) screen Add engine oil as needed Clean engine cooling fins
Auger does not rotate when auger drive control lever is squeezed	Auger drive control cable out of adjustment Broken auger shear bolts Broken idler spring (at lower end of auger drive control cable) Broken auger drive control cable Belt guides out of adjustment	Adjust auger drive control cable Replace auger shear bolts (page 27) Replace spring Replace cable Adjust belt guides 1/16" to 1/8" (1mm to 3mm) away from the belt

Troubleshooting (continued)

TROUBLE	PROBABLE CAUSE	CORRECTION
Auger does not rotate when auger drive control lever is squeezed (continued)	<p>Broken square key or loose setscrew on auger drive pulley</p> <p>Broken woodruff key and roll pin on transmission input shaft</p>	<p>Replace key and tighten setscrew</p> <p>Replace woodruff key and roll pin</p>
Auger rotates when auger drive control lever is released	<p>Auger drive control cable out of adjustment</p> <p>Belt guides out of adjustment</p>	<p>Adjust auger drive control cable</p> <p>Adjust belt guides 1/16" to 1/8" (1mm to 3mm) away from the belt</p>
Wheels do not rotate when wheel drive control lever is squeezed	<p>Gear shift lever is in the "NEUTRAL" position</p> <p>Wheel drive control cable out of adjustment</p> <p>Worn or broken wheel drive belt</p> <p>Broken wheel drive control cable</p> <p>Broken spring on end of wheel drive cable</p> <p>Broken wheel drive chain</p>	<p>Release wheel drive control lever and position gear shift lever into the desired setting</p> <p>Adjust wheel drive control cable</p> <p>Replace wheel drive belt</p> <p>Replace wheel drive control cable</p> <p>Replace spring</p> <p>Replace chain</p>
Wheels rotate when wheel drive control lever is released	<p>Wheel drive control cable out of adjustment</p> <p>Belt guides out of adjustment</p>	<p>Adjust wheel drive control cable</p> <p>Adjust belt guides 1/16" to 1/8" (1mm to 3mm) away from the belt</p>
Unit does not throw snow well	<p>Unit clogged with snow or ice.</p> <p>Snow sticking to the inside of the unit</p> <p>Incorrect wheel speed (gear) setting</p> <p>Auger drive belt loose</p> <p>Skid shoes set too high</p>	<p>Stop unit, disconnect spark plug wire, and clear jams with a long stick</p> <p>Spray sticky areas with silicone lubricant</p> <p>Use slow speed settings when throwing heavy or deep snow</p> <p>Tighten auger drive belt</p> <p>Adjust skid shoes so scraper blade clears the ground by 1/8" (3mm)</p>
Unit makes sloping cut in snow	<p>Scraper blade incorrectly adjusted</p> <p>Skid shoes set to different heights</p>	<p>Adjust the scraper blade so it clears the ground evenly by 1/8" (3mm)</p> <p>Adjust skid shoes equally</p>

Maintenance Schedule

INTERVAL	ITEM	SERVICE
Before Each Use	Engine Loose or Missing Hardware Wheel Drive Control Lever Auger Drive Control Lever	Check Engine Oil Level Tighten or Replace Check Operation Check Operation
After Each Use	Clean Unit	As Required
25 hours	Engine Oil Tire Pressure Auger Gear Box Oil Engine Cowling Air Screen Belts	Change Check Check Level Clean Check
50 hours	Spark Plugs Axle Shaft Bearing Drive Chain	Check, Clean (or replace), Re-gap Grease with Multi-purpose Grease Lightly Oil
Each Season	Engine Oil Belts Chipped, Rusted Areas	Change Check & Replace or Adjust as Needed Sand & Paint

LIMITED WARRANTY

Products Covered This warranty is for the following TROY-BILT® branded products and their attachments or accessories: chipper/shredders, chipper/vacs, walk-behind mowers, riding mowers, tractors, snowthrowers, brushcutters, sprayers, carts, composters and the Mini-Tiller.

Date Warranty Begins The warranty begins on the date of purchase.

What is Covered This product (except for the engine, as explained below) is warranted by Garden Way Incorporated to **the original purchaser only**, to be free of defects in material and workmanship under normal use and service for the following time periods:

NON-COMMERCIAL RESIDENTIAL USE 7 Years
COMMERCIAL OR OTHER NON-RESIDENTIAL USE 90 Days

ENGINES: Engines used for non-commercial residential purposes are covered by the engine manufacturer's separate Limited Warranty. Garden Way Incorporated does, however, extend the length of the engine manufacturer's limited warranty, providing you with coverage for a total of 3 years. Please refer to the separate engine owner's manual for details concerning the engine manufacturer's Limited Warranty.

Engines used for commercial or other non-residential purposes are warranted by their respective manufacturer for the time periods indicated in the Limited Warranty printed in the separate engine manufacturer's owner's manual.

What is Not Covered

1. This warranty does not cover the periodic, normal replacement of parts that wear out such as belts, seals, blades, batteries, etc.
2. This warranty does not cover damage, malfunctions or failures due to:
 - a) Use of unauthorized accessories or attachments.
 - b) Misuse, accidents, or a lack of reasonable and necessary maintenance as specified in your product's Owner/Operator Manual (you may wish to keep records of maintenance and service).

What We Will Do For You We will, at our option, repair or replace any part found to be defective in material or workmanship, without charge for parts and labor. However, charges for pick-up, delivery, and service calls are not covered by this warranty.

How to Obtain Non-Engine Related Warranty Service

- You may be required to provide proof of the date of purchase (your sales receipt, for example).
- Contact any TROY-BILT® Authorized Service Dealer (if purchased from a dealer, we recommend that you contact the same dealer you purchased this product from in order to give the dealer the opportunity to service you to your satisfaction). Refer to your local telephone directory for the name of your nearest dealer or call the TROY-BILT® Technical Service Department (see Toll-Free number below) for assistance.

-OR-

- Contact the TROY-BILT® Technical Service Department in Troy, N.Y. at this Toll-Free number: **1-800-833-6990**.

How to Obtain Engine Warranty Service Contact any service dealer that is authorized by the manufacturer of your engine. Please refer to the engine manufacturer's Limited Warranty for exact details on how to obtain warranty service. If you have any questions or concerns regarding engine warranty service, please call the TROY-BILT® Technical Service Department for assistance.

Disclaimer of Consequential Damages Garden Way Incorporated shall not be liable under any circumstances for any incidental or consequential damages or expense of any kind, including but not limited to cost of equipment rental, loss of profits, or cost of hiring services to perform tasks normally performed by the equipment.

Limitation of Implied Warranties Any implied warranties, including without limitation any implied warranty of merchantability or fitness for a particular purpose, shall be limited in duration to a period of seven years (90 days if product is purchased for commercial or other non-residential use) from the date of sale.

SOME STATES DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS. THEREFORE, THE ABOVE LIMITATIONS OR EXCLUSIONS MAY NOT APPLY TO YOU.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

For customer assistance, contact your nearest authorized dealer or:

In the United States: Garden Way Incorporated • 102nd St. and 9th Ave. • Troy, New York 12180
For Technical Service: (800) 520-5520 • For Parts: (800) 648-6776

In Canada: Garden Way Incorporated • 320 Van Sickle Rd., Unit 12 • Saint Catherines, Ontario L2R 6P7
For Technical Service or Parts: (800) 225-3585